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THE ROYAL COLLEGE OF SURGEONS OF ENGLAND

DESCRIPTIVE CATALOGUE

OF THE

PATHOLOGICAL SPECIMENS

CONTAINED IN

THE MUSEUM

OF

THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

SECOND EDITION

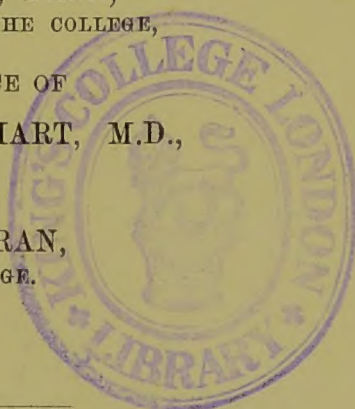
BY

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MEMBER OF THE COUNCIL OF THE COLLEGE,

WITH THE ASSISTANCE OF
JAMES FREDERIC GOODHART, M.D.,

AND

ALBAN H. G. DORAN,
FELLOW OF THE COLLEGE.



VOLUME III.

MORBID CONDITIONS OF THE TEETH, JAWS, ALIMENTARY TRACT,
LIVER AND GALL-BLADDER, DUCTLESS GLANDS,
CIRCULATORY AND RESPIRATORY ORGANS.

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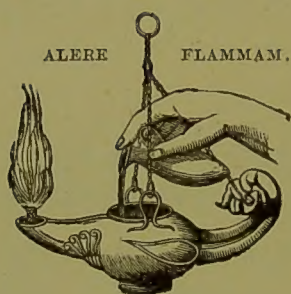
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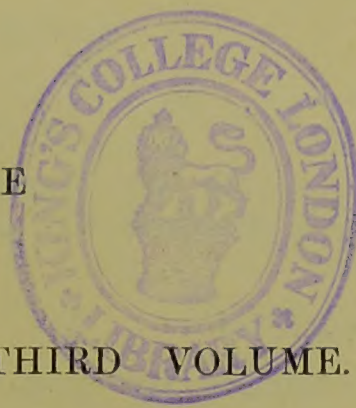
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Division II. SPECIAL PATHOLOGY.

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Fractures and other Injuries of Teeth.

Fractures of Teeth 2121, 2122.

Displacement following Fracture of the Jaw : 2123 ?

Effects of Gun-shots in Tusks : 2124 to 2135.

2121. An upper molar tooth, one of the fangs of which was broken in extraction. The end of the pulp was torn out of that part of the fang which remained in the jaw and is attached to the end of the portion extracted. *Hunterian.*

2122. A half of a molar tooth from a man aged 60. The tooth was completely split in two during an attempt to bite a hard crust of bread. The crown is much worn, but not carious. There is a considerable deposit of "secondary

dentine" in the pulp-cavity ; it has been suggested that this deposit may determine the liability to fracture of the tooth.

Presented by S. James A. Salter, Esq., 1881.

2123. A second left lower bicuspid tooth, fractured close to its neck. The crown, imbedded in the floor of the mouth at the moment of fracture, remained there two years before it was detected and extracted. The cast shows the condition of the lower jaw at the time the crown was removed. The fang was extracted at the same time.

From a man who fractured his lower jaw-bone and injured several teeth, through falling on his chin from a ladder. The bone was broken between the right canine and first bicuspid and between the left lateral incisor and canine teeth. The fractures united well, but suppuration took place and continued, from the socket of the right lateral incisor which had been loosened. This tooth was removed, and then the crown of the second left bicuspid was detected behind it (see Heath, 'Diseases and Injuries of the Jaws,' 2nd ed. pp. 16 and 362).

*Received with the Jacksonian Prize Essay,
'On Diseases and Injuries of the Jaws,' 1868.*

2124. An iron bullet, enclosed in ivory the surface of which is beset with small spicula and nodules. The case of ivory is such as forms around balls when they penetrate the pulp of the tusk. Had the tusk continued to grow it is probable that this ball, like many in the following specimens, would have become imbedded in the ivory gradually formed round it in the gradual eburnation of the pulp ; but the ivory would have remained distinguished by its yellow colour and its less regular and looser texture.

From the Leverian Museum.

2125. Portion of the tusk of a young Elephant, with a leaden musket-ball projecting into its pulp-cavity. The ball entered that part of the tusk which was within the alveolar cavity, and the hole by which it entered is completely closed externally by new bone, though not regularly enough to conceal its place of entrance. Where the ball projects into

the pulp-cavity, new ivory has been formed in a border round it and has partially enclosed it. *Hunterian.*

2126. Section of the tusk of an Elephant, in which a leaden bullet is imbedded. The ivory around it has not a natural appearance but is closely united to the adjacent healthy ivory. Below the bullet, and between it and the exterior of the tusk, there is an irregular cavity, probably indicating a part of the track of the ball at which, in consequence of the death of the pulp, no new ivory was formed.

Hunterian.

2127. Section of the tusk of an Elephant, exhibiting a projection of imperfectly formed ivory at one part of the pulp-cavity. The imperfect ivory, in which probably a bullet is imbedded, is not closely united to the healthy ivory.

Hunterian.

2128. Sections of the tusk of an Elephant, close by the surface of which an iron bullet is imbedded. The hole at which the bullet entered is closed by an uneven layer of dentine, and the bullet is imbedded in apparently healthy ivory.

Hunterian.

2129. Section of the tusk of an Elephant in which an iron musket-ball is encased in a large quantity of imperfectly formed ivory.

Hunterian.

2130. Two similar specimens. In one of them the imperfect ivory formed around the ball was so little connected with the healthy ivory that over a large portion of its surface it has been smoothly separated, as if it had been enclosed in a distinct cavity.

Hunterian.

2131. Sections of a similar specimen.

Hunterian.

2132. Section of the tusk of an Elephant, in the interior of which it is probable that a bullet is imbedded. Both the cut surfaces exhibit a large quantity of imperfectly formed ivory, distinguishable by its yellowish colour, its uneven outline, and the absence of the regularity of texture seen in the adjacent healthy ivory. On the exterior of the tusk is a cavity indicating the spot at which the ball entered.

Hunterian.

2133. Section of the tusk of an Elephant, wounded by a bullet which passed through one of the walls of that part of the tusk which was within the alveolus, traversed the pulp, and was found in it nearly opposite the part at which it entered. The hole at which the ball entered the outer surface of the tusk is smoothly closed with new dentine; and on the interior of the pulp-cavity, where the ball entered, there is a large irregularly knobbed projecting mass of new ivory.

Hunterian.

2134. Sections of part of a tusk in which an iron bullet is imbedded. The unhealthy ivory immediately surrounding the bullet is intimately united with the rest of the tusk. The external surface of the tusk where the bullet penetrated appears healthy, but on its inner surface there is a deep depression, something like that of a cicatrix, with narrow grooves radiating towards its centre. There are two other cavities in the tusk, the contents of which have been removed; they are both lined by membrane. [Both the sections are warped, and their surfaces hardly correspond.]

Presented by Thomas Blizard, Esq.

2135. The base of an Elephant's tusk, irregularly shaped and having numerous large conical processes and nodules of ivory growing from the walls of the pulp-cavity towards the jaw. A section of a cavity, in which a bullet was lodged, is shown; and much of the adjacent ivory has an unhealthy texture.

Presented by Sir Thomas Stamford Raffles.

Malformations and Irregularities of the Teeth.

Coalescence of Teeth : 2136, 2136 A.

Ill-developed Teeth : 2136 B.

Honey-comb " Teeth and other Irregularities : 2137, 2138.

Syphilitic Teeth :

Malformed Tusks : 2139 to 2142.

2136. Two temporary incisor teeth, united by their adjacent edges : the union of the fangs is complete ; that of the crowns is only partial. *Hunterian.*

2136 A. A carious molar tooth firmly united by dentinal tissue to the adjoining molar, apparently the third.

Presented by Frederick Le Gros Clark, Esq., 1881.

2136 B. " A grinder of the lower jaw, which had formed in the gum, for it was completely out of the jaw, and was loose ; therefore drawn, and proved to be a tooth not fully grown." —*Hunterian MS. Catalogue.*

2137. A set of incisor, canine, and bicuspid teeth, with an imperfect development of the enamel, giving rise to the condition known as the "honey-comb tooth."

Presented by S. James A. Salter, Esq., 1881.

2138. Incisor and canine teeth from several subjects, showing deep annular and parallel depressions on the fangs.

Presented by S. James A. Salter, Esq., 1881.

2139. A short malformed Elephant's tusk. Its surface is covered with irregular knobs and plates of rough unhealthy ivory ; its central part appears more healthy.

Presented by Sir Thomas Stamford Raffles.

2140. A similar specimen.

2141. A similar specimen.

2142. A similar specimen. The tusk has grown to a larger size and is more irregular in form and more thickly covered with unhealthy ivory.

2142 A. A similar specimen.

Presented by Nathaniel Stevenson, Esq., 1876.

2142 B. A mass of ivory, 11 inches in length and 15 inches in circumference, probably a malformed tusk.

Presented by Sir T. Stamford Raffles, 1817.

DISEASES OF THE TEETH.

Dental Caries: 2136 A, 2143 to 2145, 2154.

Hypertrophy of the Pulp: 2146.

Formation of "secondary dentine" in pulp-cavity: 2122, 2147.

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Cysts connected with Teeth (Periosteal Cysts): 2161.

Alveolar Abscess and "Gum-boil": 2162 to 2164.

Ulceration of Alveoli: 2163 A, 2165 to 2167.

Tumours of the Teeth (Odontomata): 2168 to 2172.

Affections of the Gums, Tartar, &c.: 2173 to 2179.

Transplanted Teeth: 2180 to 2183.

Dental Caries *.

2143. Section of a bicuspid tooth of which half the crown is

* "The most common disease to which the teeth are exposed is such a decay as would appear to deserve the name of mortification. But there is something more; for the simple death of the part would produce but little effect, as we find that teeth are not subject to putrefaction after death, and therefore I am apt to suspect, that during life there is some operation going on which produces a change in the diseased part."—*Hunter: On the Teeth: Works*, vol. ii. p. 59.

decayed. Part of the decayed substance has been removed ; the rest is distinguished by its dull pale-brownish colour and the loss of its natural texture, which loss is more complete at the surface than in the deeper part of the decayed portion. The pulp-cavity is healthy ; part of it is filled with red injection. The portion of the dentine adjacent to the decayed part is opaque white. *Hunterian.*

2144. Section of a decayed molar tooth, in which the disease has destroyed one of the tubercles of the crown, and has extended into the pulp-cavity and along its walls. On the opposite side there is a small opaque-white spot of diseased enamel. *Hunterian.*

“ It [decay] almost always begins externally in a small part of the body of the tooth, and commonly appears at first as an opaque white spot. This is owing to the enamel’s losing its regular and crystallized texture, and being reduced to a state of powder, from the attraction of cohesion being destroyed, which produces similar effects to those of powdered crystal. When this has crumbled away the bony part of the tooth is exposed ; and when the disease has attacked this part, it generally appears like a dark brown speck.”—*Hunter : On the Teeth ; Works*, vol. ii. p. 59.

2145. A collection of variously decayed teeth, one from a Hog, the rest from men. They display most of the changes described by Mr. Hunter as characteristic of the disease :—its commencement in the exterior of the tooth—the “ dark brown speck ” of the decayed portion of dentine—the round form of the decayed part—the appearance of a black crack, indicating the beginning of decay “ on the hollow part of the grinding surface of the molars,” &c. *Hunterian.*

Hypertrophy of the Pulp.

2146. Section of a molar tooth, of which the crown has been destroyed by decay, and the pulp-cavity is filled with a diseased growth called “ a fungus ” in the *Hunterian* catalogue. *Hunterian.*

Formation of "Secondary Dentine."

2147. A section of a tooth, so much worn by attrition that i pulp-cavity is exposed ; but this has been filled-up by the formation of "secondary dentine."

Presented by Samuel G. Shattock, Esq., 1883.

Calcification of Pulp.

2148. A mass of ivory found within the pulp-cavity of the tusk of an Elephant. It has a nearly cylindrical form, pointed at its two extremities : it measures exactly five inches in length, and an inch and a half in diameter ; on its surface there are several small nodules of ivory, irregularly scattered, but it is everywhere so smooth that it could not have been adherent to the walls of the pulp-cavity. *Hunterian.*

2149. Three similar but much smaller growths of ivory, from the pulp-cavity of an Elephant's tusk. One, a very slender cylindrical and branched portion, appears to have been loose ; another, about five inches long and half an inch in diameter, has been sawn across at one end, probably where it was attached to the wall of the pulp-cavity ; and the other specimen exhibits several small nodules of ivory attached to the wall of the pulp-cavity by broad bases.

Hunterian.

2150. A section from the base of the tusk of a Walrus, with nodules of ivory in the pulp-cavity. The largest of them is loose ; others are attached to the wall. *Hunterian.*

2151. A similar section, in which the distal portion of the pulp-cavity is filled with similar nodulated and granular ivory adhering to its walls. *Hunterian.*

2152. A mass of the same kind, but much larger, covered with

long thick spines and nodules of ivory. It is of an irregular crescentic form, and at one part measures ten inches in circumference. *Presented by Thomas Chevalier, Esq.*

2153. Portion of the inner wall of the pulp-cavity of an Elephant's tusk covered with irregular growths of ivory.

Purchased, 1872.

- 2153 A. The root of a very large Elephant's tusk, which is in part filled with rough and nodulated masses of ivory.

Absorption of Fangs.

2154. Carious molar and bicuspid teeth, showing absorption of the ends of the fangs, most marked in one molar.

Presented by S. James A. Salter, Esq., 1881.

*Hypertrophy of the Fangs.**

2155. "A [bicuspid] tooth, swelled in its body, which gave great pain, and made the antrum suspected."—*Hunterian MS. Catalogue*. The enlargement is due to an hypertrophy of the cementum, and is commonly known as dental exostosis.

2156. A molar tooth, of which the fang is enlarged, especially at its extremity, and has a nodulated bulb-like form.

Hunterian.

* "Another disease of the teeth is a swelling of the fang, which most probably arises from inflammation, while the body continues sound, and is of that kind which in any other bone would be called a spina ventosa. It gives considerable pain, and nothing can be seen externally. The pain may either be in the tooth itself or the alveolar process, as it is obliged to give way to the increase of the fang."—*Hunter: On the Teeth; Works*, vol. ii. p. 71.

- 2156 A. A bicuspid tooth with a rounded thickening of the extremity of its fang. It is not affected with caries.

Hunterian.

2157. A molar tooth deeply decayed in the centre of its crown. All its fangs are enlarged by the formation of a thin layer of granular, dull-white, new cementum, which is chiefly accumulated about the deeper part of the fang. Extreme pain attended its formation.

Presented by John Quekett, Esq.

Inflammation of Dental Periosteum (Periodontitis).

2158. The fang of a decayed tooth, of which the periosteum at the apex of the fang is much thickened from inflammation.

Hunterian.

“ Upon pulling out these teeth [which have been frequently inflamed] we may in general observe a pulpy substance at the root of the fang, so firmly adhering to the fang as to be pulled out with it. This is in some pretty large, so as to have made a considerable cavity at the bottom of the socket. This substance is the first beginning of the formation of a gum-boil, as it at times inflames and suppurates.”—*Hunter : On the Teeth ; Works*, vol. ii. p. 69.

2159. A similar growth, attached to the fangs of an apparently healthy molar tooth.

From the Museum of Sir A. P. Cooper.

2160. The fang of a decayed tooth, having a small mass of thickened periosteum attached to its surface. *Hunterian.*

Cysts connected with Teeth.

2161. Three specimens of decayed teeth with cysts attached to their roots. Two of the cysts are small, one being remarkable for the length of its pedicle. The third is rather

more than half an inch in diameter, and was partly torn across in extraction. The contents of the cysts were found, on microscopic examination, to consist of degenerating pus ; their walls were formed of fibrous and granulation tissues, and they had no epithelial lining. (See Heath, 'On Diseases and Injuries of the Jaw,' 2nd Edition, pp. 160, 161, and Brit. Med. Journ. vol. i. 1883, p. 5.)

Presented by Christopher Heath, Esq., 1868.

- 2161 A. An incisor tooth with a vascular thick-walled cyst attached to one side of its fang.

Alveolar Abscess and " Gum-boil."

2162. The fang of an incisor tooth, of which the whole crown has been destroyed by decay. The decay is limited at the junction of the crown and fang. The periosteum is thickened and appears to have constituted the wall of a small abscess-cavity at the apex of the fang. *Hunterian.*

"The canal in the fang of the tooth is more slowly affected; the scooping process appears to stop there, for we seldom know a fang become very hollow to its point when in the form of a stump; and it sometimes appears sound, even when the body of the tooth is almost destroyed: hence I conclude that the fang of the tooth has greater living powers than the body, by which the process of the disease is retarded; and this part appears at last only to lose its living principle, and not to take on the mortifying process above described; for which reason it remains simply a dead fang." —*Hunter: On the Teeth; Works*, vol. ii. p. 60.

2163. The inflamed fang of a first molar tooth, of which the alveolus communicated with the antrum and had set-up suppuration in that cavity.

Presented by Christopher Heath, Esq., 1883.

- 2163 A. The lower jaw of a Boar. Upon the outer surface of the left half is a carious channel, sufficiently large to admit

the tip of the little finger, which opens into the alveolus of a molar tooth. There is considerable thickening and heaping-up of bone around the aperture of the channel, which probably resulted from an alveolar abscess. The affected alveolus is slightly ulcerated, and its inner wall has been absorbed.

Hunterian.

2164. "A gum-boil that had healed up, which is seen by a little rising point" above the second left incisor tooth. The necks of the incisor and canine teeth are decayed.

Hunterian.

"Gum-boils are easily known. Those which open through the gum may be distinguished by a small rising between the arch of the gum and the attachment of the lip : upon pressing the gum at the side of this point some matter will commonly be observed oozing out at the eminence. This eminence seldom subsides entirely ; for even when there is no discharge, and the opening is healed over, a small rising may still be perceived, which shows that the gum-boil has been there."*—*Hunter : On the Teeth ; Works*, vol. ii. p. 73.

Ulceration of Alveoli.

2165. Part of the upper jaw of a Lion or Tiger, from which several teeth have fallen, apparently in consequence of ulceration of their sockets and the alveolar margins.

Hunterian.

2166. Part of a lower jaw, apparently from the same animal as the preceding, with extensive ulceration of the sockets of the canine teeth and their alveolar margins, and corresponding disease of the surface of the fangs of those teeth.

Hunterian.

2167. Part of the lower jaw of a Lion or Tiger, with the fangs

* After these Mr. Hunter treats of "Excrescences from the Gum." The specimens of the various diseases which may be thus termed are included in the next Series, "Tumours of the Jaws;" Mr. Hunter himself says they "do not wholly belong to our present subject."

of two of its molar teeth extensively decayed. The adjacent alveolar margins of the jaw are on one side ulcerated, and on the other appear to have been unnaturally vascular.

Hunterian.

Tumours of the Teeth (Odontomata).

2168. An 'odontome coronaire' which grew from the back of the right lower wisdom-tooth, shown in the next specimen. It is, probably, composed of dentine, and on its flat upper surface are numerous white papillæ of enamel. The margin is eroded by absorption from contact with the granulations that surrounded it; in the uppermost and deepest erosion is a minute ring-like shell of enamel from which the dentine has been absorbed. (For a magnified drawing of this specimen see Guy's Hospital Reports, third series, vol. iv. 1858, plate 1. fig. 4).

2169. A section of the wisdom-tooth from which the odontome No. 2168 grew. The pulp-cavity of the mass communicated with that of the posterior fang through the channel into which a bristle has been passed. (This specimen is figured in Guy's Hospital Reports, third series, vol. v. 1859, p. 331.)

From a man aged about 35. The tumour caused great pain and lay imbedded in the mucous membrane, scarcely projecting above the surface, and surrounded by irritable bleeding granulations. A few months after it was removed, a thin plate of dentine bearing nodules of enamel sprang up in its place. The tooth itself, setting-up alveolar periostitis, had to be removed. (See, for a full account of the case, 'Contributions to Dental Pathology,' *op. cit.* 1858, p. 279, and 1859, p. 329.)

Presented by S. James A. Salter, Esq., 1881.

2170. An incisor tooth, which has a small spiculum of enamel projecting from the anterior surface of its crown.

Hunterian.

2171. A molar tooth, on which, attached to one side of its fang, and diverging at a right angle from it, there is a large growth apparently of ivory (*odontome radicaire*). The growth is of irregular form, not much unlike that of a large molar tooth; it has a smooth polished surface, and measures eleven lines in length; the part by which it is attached to the fang is five lines in diameter, and at the opposite end, which resembles the crown of a molar tooth, it is seven and a half lines in its greatest diameter.

Hunterian.

2172. One half of an odontoma from the lower jaw. The whole mass measured an inch and a half antero-posteriorly, an inch transversely, and an inch and a quarter from above downwards; it weighed 315 grs. Its surface is roughened by stalactitic excrescences. Its section presents a complicated marbled appearance due to the admixture of dentine, osteo-dentine, and a small proportion of enamel. The excrescences on the surface, as well as the greater part of the interior, are made up of folds of dentine, which surround flattened pulp-chambers. Enamel is present on some of the excrescences and dips down, following the convolutions of the dentine.

The tumour was removed from a young lady, aged 18, who in childhood was rickety. The first teeth came late and rapidly decayed. Nothing abnormal was noticed about the second dentition. Eight months before the operation pain and uneasiness was experienced; these symptoms led to the extraction of several teeth, and subsequently to an effort to remove a supposed encysted tooth, a procedure which set-up inflammation and suppuration of the jaw. Ultimately the odontoma became exposed, but, until removed, it was believed to be a sequestrum. (See an account by the donor and Mr. Charles Tomes, *Trans. Clinical Soc.* vol. xv. p. 10, 1882.)

Presented by Christopher Heath, Esq., 1882.

Affections of the Gums, Accumulations of Tartar, &c.

“The Scurvy in the Gums (vulgarly so called).”

[The gums sometimes] “swell, become extremely tender, and bleed upon every occasion; which circumstances being somewhat similar to those observable in the true scurvy, the disease has generally been called a scurvy in the gums.”

“But as this seems to be the principal way in which the gums are affected I suspect that the same symptoms may arise from various causes, as I have often seen the same appearances in children evidently of a scrofulous habit, and have also suspected the same cause in grown people: they likewise frequently appear in persons who are in all other respects perfectly healthy.”—*Hunter: On the Teeth; Works*, vol. ii. p. 82.

2173. Part of a lower jaw, with the margins of the gum spongy and detached from the teeth, and a gum-boil in front of the fang of the right central incisor tooth. *Hunterian.*

“There are parts of the tooth which lie out of the way of friction, viz., the angles made by two teeth, and the small indentation between the tooth and gum.

“Into these places the juices are pressed, and there stagnate, giving them at first the appearance of being stained or dirty.” . .

“All our juices contain a considerable quantity of calcareous earth, which is dissolved in them, and which is separated from them upon exposure, which continues mixed with the mucus; so that the extraneous matter consists of earth and the common secreted mucus.”

“The earth is attached to and crystallized upon the tooth, and the mucus is entangled in these crystals.”—*Hunter: On the Teeth; Works*, vol. ii. pp. 85, 86, 87.

2174. Two molar teeth, with thick deposits of tartar on one side of the base and on a small part of the surface of their crowns.

2175. A mass of earthy substance, which formed on the stump of a tooth in the upper jaw of a woman seventy years old. It looks like a mass of tartar, and is upwards of an inch in length, and nearly an inch in breadth. *Hunterian.*

Mr. Hunter probably alludes to this specimen when he says:—
“I once saw a case of this kind where the accumulation, which was on a grinder, appeared like a tumour on the inside of the mouth, and made a rising in the cheek, which was supposed, by every one that felt it, to be a scirrhus tumour forming on the cheek; but it broke off, and discovered what it was.”—*Hunter: On the Teeth; Works*, vol. ii. p. 86.

2176. A canine tooth, of unusual form, and having its whole fang and part of its crown covered with a layer of tartar.

Hunterian.

2177. The stump of a tooth with an excessive amount of tartar around it.

From an old man whose skeleton is preserved in No. 678.

From a Dissection-subject.

2178. Two teeth from a small Dog, thickly incrustated with tartar.

Hunterian.

2179. Part of the bones of a face, with the last molar tooth on the right side of the upper jaw covered on its outer side with a large granulated deposit of tartar.

Hunterian.

*“ Transplanted Teeth.” **

“ This operation [of transplanting teeth], like all others, is not attended with certain success. It sometimes happens that the two parts do not unite, and in such cases the tooth often acts as an extraneous body †, and instead of fastening, the tooth becomes looser and looser, the gum swells, and a considerable inflammation is kept up, often terminating in a gum-boil. In some cases, where it is also not attended with success, there are not these symptoms: the parts appear pretty sound, only the teeth do not fasten, and sometimes drop out. It also happens that transplanted teeth have a very singular operation performed on them while in the socket; the living socket and gum finding this body kept in by force, so that they cannot push it out, set about another mode of getting rid of it, by eating away the fang till the whole is destroyed,

* The general account of Mr. Hunter's experiments and doctrines respecting the transplantation or grafting of parts is given in a former portion of the Catalogue [Vol. I. p. 42] with the description of the teeth transplanted into the cock's combs and other similar specimens. Here are placed only the specimens of disease or absorption of transplanted or replaced teeth.

† “ I say often, because I do not suppose that it always acts as an extraneous body; because we know that dead teeth have stood for years without affecting the sockets or gums in the least. We may therefore suppose that it is sometimes the case with transplanted living teeth.”

exactly similar to the wasting of the fangs of the temporary teeth in the young subject.

“I have all along supposed, that where this practice is attended with success there is a living union between the tooth and the socket, and that they receive their future nourishment from this new matter. My reasons for supposing it were founded on experiments on other parts, in animals, and also observations made on the practice itself; for, first, I observed that they kept their colour, which is very different from that of a dead tooth; for a living tooth has a degree of transparency, while a dead one is of an opake chalky white.

“Secondly, there are instances of their becoming diseased, in the same manner as an original living tooth; at least the following case favours strongly this opinion:—

“In October, 1772, a gentleman of the city of London had a tooth transplanted, which was perfectly sound, and fixed in its new socket extremely well; about a year and a half after two spots were observed on the fore part of the body of the tooth, which threatened a decay; they were exactly similar to specks, or the first appearance of decay, which come upon natural living teeth. Pain is also sometimes felt in the transplanted tooth.

“But what puts it beyond a doubt is, that a living tooth, when transplanted into some living part of an animal, will retain its life; and the vessels of the animal shall communicate with the tooth, as is shown by experiments.” [See vol. i. p. 43.]—*Hunter : On the Teeth ; Works*, vol. ii. pp. 103, 104.

2180. Two incisor teeth which were transplanted, but fell out.

Numerous small round pits and channels like worm-eaten holes have been made in their fangs. *Hunterian.*

2181. A bicuspid tooth which, after it had been drawn and a decayed cavity in its crown had been stopped, was replaced in its socket. Its fang was nearly all absorbed, and it fell out. *Hunterian.*

2182. A bicuspid tooth which was transplanted into a young lady's jaw, and remained fixed for four years. Half its crown is destroyed by decay, apparently of the ordinary

kind ; its fang is very thin, and near its extremity there is a hole through it, as if it had been drilled. *Hunterian.*

2183. Section of an incisor tooth, which fell out after transplantation. Parts of its fang have been absorbed, as in the preceding specimens. There is a large hole through its crown formed, apparently, by ordinary decay. *Hunterian.*

APPENDIX TO INJURIES AND DISEASES OF THE TEETH.*

Fracture : 2121 A.

Malformations and Irregularities of the Teeth : 2135 A to 2137 B.

Deviations from the usual size : 2135 A.

Deviations from the usual Number of Fangs : 2135 B to 2135 E a.

Supernumerary Teeth : 2135 F to 2135 O.

Deficiency in the Number of Teeth : 2135 P, 2135 Q.

Coalescence and partial Union of Teeth : 2135 R, 2136 A a, 2136 A b.

Malformed and Ill-developed Teeth : 2136 C to 2136 G a.

Teeth with Malformed, Ill-developed, Divergent or otherwise abnormal Fangs : 2136 H to 2136 K.

Irregularities in the Position of Teeth : 2136 L to 2136 O.

"Honey-combed Teeth" : 2137 A, 2137 B.

Diseases of the Teeth :—

Undue Wearing of Teeth by Attrition : 2142 C to 2142 F.

Erosion : 2142 G.

Caries : 2145 A.

"Polypus of the Pulp" : 2146 A.

Absorption of Fangs : 2154 A.

Absorption by Pressure : 2154 B.

Hypertrophy of Fangs : 2157 A.

Alveolar Cyst : 2161 B.

Tumours of the Teeth : 2169 A, 2169 B, 2170 A.

Accumulations of Tartar : 2177 A.

2121 A. A lower lateral incisor tooth, of which the crown has been separated by a fracture. The lingual surface of the tooth is grooved as if by erosion.

Presented by W. S. Burrows, Esq.

2135 A. Six teeth to illustrate deviations from the normal size.

From various Donors.

* N.B.—The specimens described in this Appendix were, with few exceptions, collected, and many of the others were presented, by Alfred Coleman, Esq., who revised the Sheets of the Catalogue of the previously existing collection of Injuries and Diseases of the Teeth. They were received too late for description in their appropriate places.—*May 1884.*

2135 B. Eleven lower molar teeth, each with three fangs.

From various Donors.

2135 c. Eight lower molar teeth, each with four fangs.

From various Donors.

2135 D. Three upper bicuspid teeth, each with three fangs.

From various Donors.

2135 E. An otherwise well-formed incisor tooth with two fangs. One fang is small and slender, and at its base is separated from the larger fang by a groove which extends for a short distance along the lingual surface of the crown.

Presented by R. G. Bradshaw, Esq.

2135 Ea. An upper and a lower molar tooth, each with a buttress-like outgrowth from one of the fangs projecting towards the crown. They terminate respectively in a flat and a concave surface near the level of the neck.

Presented by F. Buckley, Esq., and W. S. Burrows, Esq.

2135 F. Nine supernumerary teeth showing the rudimentary or generalized form which they usually take. All the teeth are small, their crowns are cone-shaped and terminate in a pointed or, in one instance, in a truncated apex; the lingual and labial surfaces are indistinguishable, and the enamel terminates in an even layer at the neck. The fangs are all single, and in some stunted or unusually slender.

In form these teeth have some resemblance to those found in ovarian and other dermoid cysts.

From various Donors.

2135 G. A similar supernumerary tooth, with a cast showing the position it occupied immediately behind the upper right central incisor, which is slightly displaced forwards.

Presented by W. Farnham, Esq.

- 2135 H. A supernumerary tooth, of which the lingual surface is concave. On its narrow but flattened cutting-surface is a deep fissure separating an outer and an inner cusp.

Presented by A. Alabone, Esq.

- 2135 I. A very large multi-cuspidate supernumerary tooth, which was anterior to a central incisor. Its crown is rounded with irregular depression, and its fang is thick and spindle-shaped.

Presented by A. Coleman, Esq.

- 2135 K. A cast of an upper jaw with two supernumerary teeth of the same form as that last described ; they occupy the position of the central incisors, which are pushed outwards in front of the lateral incisors.

Presented by W. E. Harding, Esq.

- 2135 L. Casts of the upper jaws of two members of the same family. In both there are two supernumerary incisors placed behind the central incisors ; the incisors have the pegged and notched condition of the crowns characteristic of congenital syphilis.

Presented by W. E. Harding, Esq.

- 2135 M. A cast of the left side of a lower jaw, with a supernumerary molar tooth situated on the outer side of the "wisdom"-tooth. Its crown is carious.

Presented by C. V. Cotterell, Esq.

- 2135 N. A cast of the right side of a lower jaw, with a supernumerary tooth situated directly behind the "wisdom"-tooth. There are several small cusps upon its surface.

A similar denticle had previously been removed from the same position.

Presented by C. V. Cotterell, Esq.

- 2135 O. A cast of an upper jaw, with two small closely approximated supernumerary teeth, which are situated behind the small ill-developed wisdom-tooth. The temporary canine also persists.

Presented by C. V. Cotterell, Esq.

2135 P. The alveolar and palatine portions of an upper jaw, in which the first bicuspid on the right side is deficient.

2135 Q. Casts of the upper and lower jaws, in each of which two of the incisor teeth, apparently the lateral, are deficient. The incisor teeth which are present are small and peg-shaped, but are not notched.

From a youth, aged 17.

Presented by C. V. Cotterell, Esq.

2135 R. An upper central and a lateral incisor tooth which are completely united along their whole extent except at the ends of the fangs, which are slightly divergent. The line of union is marked by a groove which extends with a slight deviation along the labial surface of the crowns. The teeth are well developed.

For similar specimens see the Catalogue of the Teratological Series, No. 391, p. 90.

Presented by W. Harding, Esq.

2136 A a. A molar tooth, of which two of the fangs are united at their apices by cementum, probably by abnormal increase of that tissue. Its crown is extensively destroyed by caries.

Presented by W. S. Burrows, Esq.

2136 A b. A carious permanent lower molar tooth, which is united by ligamentous tissue to the root of a temporary molar.

Presented by W. S. Burrows, Esq.

2136 c. An extremely malformed upper central incisor tooth. The crown is, except on its lingual surface, thick and rounded, and is the seat of caries. The fang is short, but extremely thick and rounded.

Presented by W. S. Burrows, Esq.

2136 D. A very large and malformed upper third molar tooth.

Presented by A. Alabone, Esq.

2136 E. Cast of an upper jaw, with an ill-developed second bicuspid on the right side, which has the usual form of a supernumerary tooth. *Presented by C. V. Cotterell, Esq.*

2136 F. An ill-developed and malformed canine tooth. The fang describes two curves : one at the neck with the convexity towards the lingual surface, and the other in the middle of the fang, with the convexity in the opposite direction. This condition, it was thought, may have resulted from displacement of the calcified portion of the tooth upon the pulp, or "dilaceration."

Presented by F. Buckley, Esq.

2136 G. An ill-developed tooth with a sudden curve at the middle of its fang, which, it was thought, had resulted from the union of a fracture. A section, however, shows no break in the continuity of the layers of cementum, or any other signs of a fracture ; but the pulp-cavity is obliterated at the seat of the curve.

Presented by F. Buckley, Esq.

2136 Ga. An upper lateral incisor tooth, with some flattening of one side of its crown and twisting of its fang, presumably due to pressure from overcrowding of the teeth.

Presented by F. Buckley, Esq.

2136 H. Two upper lateral incisor teeth, in which the fangs are imperfectly developed.

Presented by A. Coleman, Esq.

2136 I. Eight teeth, of which the fangs are abnormally curved, divergent, coalescent, or otherwise malformed. In two instances the fangs are also hypertrophied.

From various Donors.

2136 K. A section of a molar tooth, of which one fang is unusually broad, and has an irregular cavity on its outer surface, but no communication can be found between it and the pulp-cavity.

Presented by L. Holmes, Esq.

- 2136 L. Casts of the upper and lower jaws, showing irregularity of the incisor teeth from defective development of the maxillæ. In the upper jaw the central incisor teeth are unnaturally projected forwards, and the lateral incisors are pushed backwards and inwards. The lower jaw shows the V-shaped deformity, in which the rounded curve of the incisor portion of the jaw gives place to a sharp curve or angle, at which the incisor and canine teeth are crowded together.

From a man, aged 21.

Presented by P. Gorrie, Esq.

- 2136 M. A cast of an upper jaw, showing displacement of the lateral incisor teeth backwards and inwards from the retention of two temporary teeth.

- 2136 N. Cast of the same jaw, taken after rectification of the malposition by treatment. *Presented by P. Gorrie, Esq.*

- 2136 O. A cast of an upper jaw, in which a canine tooth was situated between the central and lateral incisors on the right side. The central incisor has been partially rotated.

Presented by W. E. Harding, Esq.

- 2137 A. An upper central incisor tooth, having the irregularly grooved or ridged condition of the enamel described as the "honey-combed tooth." The fang is unnaturally short and thick.

Presented by F. C. Mortimer, Esq.

- 2137 B. A similar specimen, but the tooth is otherwise well developed.

Presented by W. S. Burrows, Esq.

- 2142 C & D. An upper and a lower molar tooth, with the crowns deeply and unevenly worn away by attrition in mastication. The dentine is worn down to a greater extent than the enamel, which forms a sharp edge to the concave surface of the crown.

Presented by F. C. Mortimer, Esq., 1883.

- 2142 E. A lower canine tooth, with a smooth vertical groove occupying the whole breadth of its inner surface. It was probably produced by wearing from attrition.

Presented by G. B. Pearman, Esq., 1883.

- 2142 F. A lower canine tooth, showing, on the posterior surface of the neck of its crown, a deep concavity which was produced by the friction of a plate carrying artificial teeth.

Presented by F. C. Mortimer, Esq., 1883.

- 2142 G. Four teeth, showing the effects of erosion, or "decay by denudation" as it was called by Mr. Hunter. Upon the labial surface of the neck of each tooth is a smooth polished groove or concavity, which in one instance extends through half the thickness of the fang, but has not opened the pulp-cavity. The crown of a molar tooth has, in addition, been excavated by decay. *Presented by A. Coleman, Esq., 1883.*

- 2145 A. A series of teeth showing the various stages leading up to their complete destruction by caries or decay.

- (A) Three teeth showing the disease in the earliest stage, in which the enamel only is affected. The diseased portion of enamel has lost its translucency, probably owing to porosity of its substance, and appears as an opaque white patch, which in one specimen has assumed a brown tint.
- (B) Several teeth arranged in gradations of the extent of the disease, to show the second stage, in which the dentine is more or less deeply affected.
- (C) Teeth in which, by the progress of the disease, the dental pulp had been exposed.
- (D) Teeth in which the dental pulp was sloughing.
- (E) Teeth showing complete or extensive destruction of the crowns, and in which the pulp had completely sloughed away.
- (F) The ends of two carious fangs which had become loose in the mucous membrane, and were finally rubbed off.

Presented by A. Coleman, Esq., 1883.

- 2146 A.** A molar tooth in which the pulp-cavity is widely exposed by destruction of the crown by caries. The pulp is increased by the formation of granulation-tissue, and projects at the bottom of the cavity as a polypus-like growth (polypus of the pulp). *Presented by A. Coleman, Esq.*
- 2154 A.** Seven teeth showing various degrees of absorption of the fangs. Four of the teeth are carious. In the lower central incisor on the observer's left the absorption was probably due to the accumulation of tartar. *From various Donors.*
- 2154 B.** A third upper molar tooth showing absorption at its neck, produced by the pressure of a second molar tooth. On the surface of its neck is a deep oval concavity, with its long axis horizontal, and which is indistinctly divided by a median vertical ridge into two smaller cavities ; these may have corresponded to the cusps of the second molar tooth. *Presented by W. S. Burrows, Esq.*
- 2157 A.** Ten teeth, of all kinds except the incisor, with hypertrophy or exostosis of the fangs. The teeth are variously affected : in some there is a bulb-like enlargement of the ends of the fangs ; in others the whole fang or fangs are thickened and irregular, with, in some instances, apparent elongation of the fang ; and in the case of the bicuspid and molar teeth the fangs are almost always more or less completely united by the hypertrophied cementum. All the teeth are carious except two. *From various Donors.*
- 2157 B.** Six teeth, or portions of teeth, with the roots similarly affected. *Presented by Sir Erasmus Wilson.*
- 2161 B.** A molar tooth with a thick-walled inflammatory sac or cyst, a quarter of an inch in diameter, attached to its fang. The walls of the cyst are continuous with the periosteum of the fang. The crown of the tooth has been extensively destroyed by caries, the pulp is exposed and sloughing, and the apex of the thickened fang, projecting into the cyst, appears to be necrosed. *Presented by A. P. Reboul, Esq.*

- 2169 A. Sections of a right upper lateral incisor tooth with a tumour-like overgrowth of the crown ("odontome coronaire," Broca). The crown is rounded and measures half an inch in diameter, but is very short. Upon its surface are two depressions, of which one is a quarter of an inch long and one eighth deep, and from one part of it a fissure extends horizontally beneath its lower surface; the other is small and superficial. A thin layer of enamel is continued over the larger depression. The hypertrophied crown is covered with a thick layer of enamel. The fang is thick, short, and curved.

Presented by W. H. Key, Esq.

- 2169 B. A cast of the upper jaw from which the preceding was taken.

Presented by W. H. Key, Esq.

- 2170 A. An upper molar tooth with a small enamel nodule projecting from the neck between the fangs.

Presented by G. B. Pearman, Esq.

- 2177 A. Two lower teeth showing considerable deposits of tartar on their crowns and fangs. Below them is a mass of tartar three quarters of an inch in length, which was removed from the lower teeth.

Presented by A. Coleman, Esq., and F. C. Mortimer, Esq.

Series XVI. TUMOURS OF THE JAWS.*

Tumours of the Gums (Epulis): 2184 to 2193 A.

Tumours of the Jaws: 2194 to 2250 B.

Tumours attached to the Jaws: 2251 to 2254.

TUMOURS OF THE GUMS (*Epulis*).

2184. "A tumour formed at the root of a diseased tooth."—(*Hunterian MS. Catalogue*.) It is an irregular mass of minutely lobulated, warty substance, pale, and in texture resembles the gums. It measures two and a half inches in length.
2185. "An excrescent tumour, taken off the gum and jaw of Mr. Price, which was cured."—(*Hunterian MS. Catalogue*.) The tumour displays the general characters of Epulis. It is of elongated oval form, and nearly two inches in length; its tissue is compact, pale, obscurely fibrous and glistening, like that of healthy gum; its exposed surface is knobbed and covered with mucous membrane. It appears to have originated in the tissue of the gum of the lower jaw.
2186. A small, deeply lobulated tumour, about half an inch long, from the roof of a lady's mouth. It was attached to the mucous membrane of the hard palate by an extremely narrow pedicle, immediately behind one of the incisor teeth. It is fibro-cellular in structure and very vascular.

Presented by John Hilton, Esq., 1868.

* The peculiar interest and importance of Tumours of the Jaws, in Practical Surgery, seem to justify the plan of placing them together, for the purpose of showing what are the various kinds of growths for which operations on these parts may be required. The present series is made with this view. In its arrangement, the tumours are placed nearly according to the plan of the Sixth Series, some regard being also paid to the particular part or tissue in which, in each case, the morbid growth originated.

2187. An epulis, fibro-cellular in structure, and about three-quarters of an inch in its longest diameter. A portion of its surface is superficially ulcerated. It was connected with the gum behind the incisor teeth of the upper jaw of an adult. *Presented by Sir W. Fergusson, 1871.*

2188. Sections of a tumour composed of bone and a substance like fibro-cartilage, of irregular shape, about an inch in its chief diameter, and covered with mucous membrane. It was removed from the alveolus of the upper jaw of a lady. A bristle is passed into the cancellous osseous substance of the base by which the tumour was attached. *Hunterian.*

2189. "A small circumscribed tumour from the inside of the mouth."—(*Hunterian MS. Catalogue.*) In structure it is like that last described.

2190. "A tumour, extracted from the inside of a lady's mouth."—(*Hunterian MS. Catalogue.*) It is almost exactly like that last described.

2191. An epulis, divided to show in its interior a nodule of bone which was not connected with the alveolus.

From the upper jaw of a young woman. (See Heath, 'Injuries and Diseases of the Jaws,' 2nd ed. p. 199, 1872.)

Presented by Christopher Heath, Esq., 1868.

2192. A section of an epulis, with a portion of the alveolar margin of the jaw, from within which it grew. It was firm, elastic, purple and grey, and composed of fine fibrous tissue with large irregular multinucleated giant-cells interspersed. (See Heath, 'Injuries and Diseases of the Jaws,' 2nd edition, p. 200, 1872.)

Presented by Christopher Heath, Esq., 1868.

2193. A left superior maxillary bone, and part of that of the opposite side, which, with a large tumour formed on them, were removed by operation. In the front of the preparation that part of the tumour is shown which projected from the mouth. It is a nodulated mass, of an elongated, oval, and somewhat arched form, measuring six inches from side to side, and four inches from above and downwards. Before removal the swelling extended to the angle of the left eye, and closed the nostrils. At the back of the preparation the cut surfaces of the bones, and those parts of the tumour which were affixed to them, and projected within the mouth, are shown. The positions of its several parts may be traced by their relation to the last two molar teeth on the left side, which remain in their places, and by a deep groove continued from them along the under surface of the tumour, which marks the course of the alveolar arch, and partially divides the tumour into two portions. Of these portions the anterior, which projected from the mouth, is by far the larger: the posterior measures nearly four inches from side to side, and nearly three inches from before backwards; it has the same external appearance as the anterior portion already described; and before removal it filled the cavity of the mouth, and projected backwards beyond the soft palate. The cut surfaces of bones shown in this part of the preparation are those of the left zygoma, the outer angle of the left malar bone, the orbital plate, nasal process, and posterior wall of the left superior maxillary bone, the vomer, and the palatine portion of the right superior maxillary bone. The outer wall of the antrum is also shown. All the intervening parts are involved in the tumour, which also projects beyond the bones in every direction. The tumour is composed of firm, uniform, pale, inelastic, and slightly vascular substance. It appears to have had its origin in the gum of the anterior part of the left upper jaw-bone, and thence to have extended in nearly every direction. The cavity of the antrum is diminished by the external pressure of the tumour, but its lining membrane is sound; and the bones, so far as they can be examined, are healthy.

The patient was a girl 20 years old. The tumour had first appeared, without any evident cause, eight years before she came under the care of Mr. Liston, as a small hard mass projecting from the gum of the second upper incisor tooth of the left side. It increased slowly, and for the most part without pain. Part of it was removed three years and a half from the time of its commencement, and it had been subjected to various treatment. During the last year its surface had always bled for a few days previous to each menstrual period. The patient recovered rapidly after the operation; and was seen, without any sign of returning disease, nine years afterwards.

The case is reported in the 'Lancet,' Nov. 5, 1836, and in the 'Medico-Chirurgical Transactions,' vol. xx. (London, 1837), p. 198. There are sketches of the appearance of the patient before and after the operations in those works, and in Mr. Liston's 'Practical Surgery,' p. 301 (ed. 1846).

From the Museum of Robert Liston, Esq.

2193 A. An epulis from a lower jaw. It surrounds a second molar tooth, which was removed with it.

In microscopic structure the specimen had the characters of an epithelioma, but it contained no "cell-nests."

From a woman, aged 52 years, who observed a swelling on the gum five months before the operation.

Presented by Frederic S. Eve, Esq., 1882.

TUMOURS OF THE JAWS.

Cystic Tumours.

Follicular, including Dentigerous Cysts: 2194 to 2197, 1701.

Multilocular Cystic Epithelial Tumours: 2198 to 2204.

Solid Tumours and allied Growths.

Hypertrophy of Condyles: 2205, 2205 A.

Hyperostosis, Exostosis, Osteoma: 2206 to 2214.

Cartilaginous and Fibro-cartilaginous Tumours: 2215, 2216.

Fibrous: 2217 to 2221.

Sarcoma and Cancer*: 2222 to 2250 B.

* The tumours of these two classes have been placed together owing to the uncertainty as regards their nature, which must exist from the absence, in many instances, of complete microscopic examinations, especially in the case of tumours of the upper jaw. Those tumours which, from their minute or naked-eye characters, may be referred to the sarcomata are placed first; and the probable nature of most of the specimens is indicated in the descriptions.

Cystic Tumours of the Jaws.

Follicular, including Dentigerous Cysts.

2194. The right side of the body of a lower jaw completely and uniformly dilated into a large spherical cyst, with very thin bony walls covered with periosteum. The condyle has become detached from the dilated body of the jaw. No tooth, or rudiment of a tooth, can be discovered in the cyst, but its inner surface is lined by a layer of small epithelial cells, and is thrown in places into thick projecting folds. The cyst perhaps originated in the enamel-organ of an abortive "wisdom" or supernumerary tooth.

From a woman aged 35. The cyst had been growing for three years, and contained a thick dark fluid. The patient recovered from the operation, and six months afterwards could masticate her food perfectly on the left side.

Presented by W. D. Spanton, Esq., 1879.

2195. The left side of the body of a lower jaw expanded into a large cyst, to the inner wall of which a retained canine tooth is attached. The cyst was lined with a thick vascular membrane, composed of granulation- and fibrous tissues, and showing no trace of epithelium.

From a girl aged 13. It had been observed for six months before operation. There was also some enlargement of the right side, and the teeth were very irregular. No opening in the cyst could be detected, although there was a constant offensive discharge from its surface. The disease being taken for a solid tumour, the affected half of the jaw was excised by the late Mr. Fearn, of Derby. The patient recovered. (See 'British Medical Journal,' vol. ii. 1864, p. 241; and Heath, 'Injuries and Diseases of the Jaws,' 2nd ed. p. 165, 1872).

Presented by Christopher Heath, Esq., 1868.

2196. The half of a dentigerous cyst, about an inch in its largest diameter, removed from the lower jaw. It was filled with an albuminous fluid, and contains a well-formed bicuspid tooth. The lining of the cyst consists of a thick

layer of fibrous tissue with granulation-tissue on its inner surface. No epithelial lining could be found.

Five months before the operation the patient, a boy aged 14, received a blow on the right side of the lower jaw, the gum bled profusely, and the jaw from that time gradually swelled. The tumour was considered at first to be an exostosis. The patient recovered. The case is recorded in the 'Lancet,' vol. i. 1850, p. 756.

Presented by Thomas Wormald, Esq., 1850.

2197. A dentigerous cyst formed around the retained first incisor in the lower jaw of a Pig. An incisor tooth is wanting externally on each side. On the right side the crown of one of the retained teeth is firmly fixed in the bony wall of a cyst, which has a membranous lining and was filled with caseous pus and fragments of food. The latter had obtained an entrance by an opening in the alveolar process, situated near the middle line. A cyst on the left side is partially laid open, and its contents, similar to those which filled the right cyst, are exposed to view.

Purchased, 1872.

Multilocular Cystic Epithelial Tumours of the Jaws.

2198. The left side of a lower jaw, from the condyle to the canine tooth, removed by operation. The walls of the jaw are expanded by a large oval multilocular cystic tumour, of which some of the cysts are filled with glairy fluid, others with firm fleshy substance. The outer wall of the tumour is so thin that it is in some parts transparent, and its continuity with the posterior margin of the jaw is in several places interrupted. There is an ulcerated opening on the gum covering the tumour, corresponding to the socket of the first molar tooth.

The tumour consisted microscopically of columns or rounded masses of small round epithelial cells or nuclei resembling those forming the deep layer of the epithelium of the gum; in some places the external layer of cells was elongated. A few alveoli were seen lined with a layer of cylindrical cells enclosing a delicate network of stellate cells, and thus precisely resembling the rudiment of an enamel-organ. The matrix of the tumour was composed of a well-developed fibrous tissue. Sections, taken from the inner side of the ulcerated alveolus mentioned above, showed

papilla-like processes of epithelium extending downwards from the gum and continuous with the columns and masses of cells forming the bulk of the tumour. (For a further account of the structure of the multilocular cystic tumours see a lecture on Cystic Tumours of the Jaws, Brit. Med. Journ. vol. i. 1883, p. 1.)

The patient was a middle-aged man, and the disease had existed for several years. The cyst, which was at first formed in the situation of the last two molar teeth, had been regarded as a simple cavity in the bone containing fluid, and setons had been passed through it with seeming benefit, but the swelling returned and increased rapidly. The operation was permanently successful.

From the Museum of Robert Liston, Esq.

2199. Part of the left ramus of a lower jaw, from the interior of which has grown a tumour about the size of a hen's egg. A small portion of the tumour projects through the internal, but the greater part through the external, wall of the ramus. A vertical section which has been made nearly through its outer part shows the interior structure to be that of a multilocular cyst. The cavities are mostly of small size, and divided from each other by strong fibrous septa containing numerous spicula and plates of bone, with no very definite arrangement. The ulcerated socket of a molar tooth passes down into the substance of the tumour at the centre of that portion of the jaw from which it springs. The margin of the socket is surrounded by raised and infiltrated mucous membrane.

In microscopic structure the tumour resembled the preceding specimen.

2200. The symphysis and part of the body of a lower jaw occupied by a multilocular cystic tumour. Upon the anterior surface two large cysts with smooth walls are exposed. A section, removing the posterior wall of the bone, shows that its cancellous tissue is occupied by many cysts of various sizes filled with a reddish granular solid material. The left incisor teeth had fallen out.

The tumour consisted microscopically of large and small alveolar spaces filled with epithelial cells, and also of tortuous columns of similar cells, lying in a matrix of fibrous tissue. The masses and columns were composed of round epithelial cells with an external lining of elongated cells. The cells had in places undergone

colloid degeneration. An ingrowth of the epithelium of the gum was observed near the socket of the left incisor tooth.

From a woman in whom the disease had been observed for five years.

Presented by Sir Wm. Fergusson, 1870.

2201. The right half of a lower jaw, with a portion of its left side, including the left incisor teeth, removed by operation. A multilocular cystic tumour, developed in the interior of the bone, extends from the middle of the ascending ramus to the first right incisor tooth. It is of an elongated oval form, and projects equally on both sides of the jaw and into the mouth. It has removed, in the progress of its growth, all the molar and the second bicuspid teeth, and has expanded, and in some situations perforated, the walls of the jaw. In these situations it is covered by the distended periosteum. An opening has been made into a cyst, in front of the coronoid process, exposing its interior, which is only partly filled with the morbid growth.

The patient was a woman 50 years old. The disease had been observed for a year, and had produced intense pain. She died a month after the operation with pleuritic effusion.

From the Museum of Robert Liston, Esq.

2202. A left superior maxillary bone, with a tumour filling the antrum, which was removed by operation. A vertical section has been made from before backwards through the whole mass, the several parts of which may be traced by their relations to the second bicuspid and first molar teeth, and to the partially obliterated sockets of the second and third molar teeth. The tumour is oval in form, its chief diameters being about three inches and two inches. It completely fills the antrum, the walls of which are extended round it; and it projected on the face, in the left nostril, and backwards to the sphenoidal cells; it is chiefly composed of a fleshy substance, with a few spicula of bone. There are some cysts in it which are filled with colloid material, and at the anterior part is an irregular cavity containing the remains of a clot of blood.

In its microscopic appearances the tumour resembled the pre-

ceding specimens, Nos. 2198 to 2201, but the cells within the alveoli had undergone colloid degeneration to a greater extent. An ingrowth of the interpapillary processes of the epithelium of the gum was observed near the last two molar teeth, and was continuous with the cells forming the mass of the tumour. Large pear-shaped indippings of epithelium occurred in the same sections; the epithelial cells forming them had undergone degeneration. These ingrowths took place close to, but not from, the alveoli of the molar teeth.

The patient was a man of dissolute habits, 24 years old. Two years before the operation he received a severe blow on the left side of the face, the apparent effects of which, however, soon disappeared. The first sign of the growth of the tumour was noticed ten months before the operation, when the last molar tooth loosened spontaneously, and fell out, after which the gum became much swollen and tender. The tumour soon after appeared in the face, and at first grew rapidly; but its subsequent progress was slow, and not accompanied by much pain. There was no ulceration of the integuments or mucous membrane over the tumour, and all its parts felt firm and slightly elastic. Besides the parts in the preparation, the left palate-bone, the root of the left pterygoid process of the sphenoid bone, and a small portion of the ethmoid bone were removed. The patient died about ten hours after the operation.

The case is reported in detail in the 'Lancet,' Nov. 26th, 1836, and briefly in Mr. Liston's "Observations on some Tumours of the Mouth and Jaws," in the 'Medico-Chirurgical Transactions,' vol. xx. p. 198 (London, 1837).

From the Museum of Robert Liston, Esq.

2203. The inner half of a tumour of the right side of a lower jaw. It is globular and contains a cavity from the walls of which lobulated growths project and almost completely fill it. This cavity communicates with the mouth by two openings: the lower is of large size; the upper and smaller opening appears to be the ulcerated socket of a tooth. The lower part of the tumour is enclosed by a shell of hard and normal bone.

The tumour was composed microscopically of straight or tortuous columns of epithelial cells, those forming the margin being elongated or cylindrical, and radiating towards the centre. At the margin of the small ulcerated opening in the gum papillary processes extended downwards from the deepstratum of the epithelium and were continuous with the columns forming the tumour.

From a man, aged 22 years. The tumour had been growing six years. It caused no inconvenience, except from its size and from a constant discharge of fluid, through the openings described,

into the mouth. The larger opening was caused by caustics applied by a quack. The tumour recurred in the coronoid process twelve years after the operation. For further details see Heath, 'On Injuries and Diseases of the Jaws,' 2nd ed. p. 304 (1872), and Trans. Path. Soc. vol. xxiii. p. 181, also MS. Notes, vol. i. p. 371.

Presented by Christopher Heath, Esq., 1872.

- 2203 A. One half of a growth which was removed from near the articulation of the jaw twelve years after the excision of the preceding specimen.

In microscopic structure it precisely resembled the primary tumour.

Presented by Christopher Heath, Esq., 1882.

- 2203 B. The right side of the body of a lower jaw affected by a malignant tumour of gland-like structure, which has completely surrounded it, and in parts invaded and destroyed the bone. The anterior portion of the growth is spherical and almost converted into a cyst from breaking-down of its tissue. The posterior part, which rises higher than the anterior, having originated around the first molar, is irregular, lobulated, and in its firmer inferior portion is of a uniform pale buff colour on section. On microscopical examination it was found that the growth was made up of tubes filled with granular cells. The surrounding tissues and the neighbouring skin were thickly infiltrated with "indifferent" cells (1871).

From a man aged 31, in whom it had been growing for two years, beginning as a movable tumour on the outer side of the gum opposite the right first molar tooth. It increased rapidly for six months before operation. (See MS. Case-book, vol. i. p. 305.)

Presented by Sir William Fergusson, 1871.

- 2203 c. A lower jaw, the left side of which is occupied by a growth of medullary substance, extending from the middle of the ascending portion to a little beyond the symphysis. Around the angle of the jaw the growth forms a tumour which projects equally on both surfaces of the bone; in the rest of its extent it is scarcely prominent; but it occupies all the interior of the jaw, from which the teeth and the greater part of the natural structure have been removed.

The destruction of the jaw, consequent on the development of the malignant substance within it, may be distinctly seen at the margin of that part which was most recently affected, below the right canine tooth : the whole of the osseous substance appears, without previous distension or any other change, to have been removed as the disease encroached upon it. The growth is covered with thick periosteum, except at the part at which it projected into the mouth, where it has a soft uneven fungous surface. A section of the tumour shows a number of small alveoli and minute cysts filled with a pulpy material which microscopically consists of epithelial cells.

From the Museum of Robert Liston, Esq.

- 2203 D. Portions of a rib, scapula, and clavicle, from the same patient as the jaw last described. They contain (as many other of the bones did) similar growths. The rib and scapula are fractured at the parts in which the disease is situated.

From a man 64 years old, in whom the tumour of the jaw had long existed and had given great pain. His health was deeply affected, and for some time before his death he had complained of pain in every part of his body.

From the Museum of Robert Liston, Esq.

2204. A soft tumour of the lower jaw. It contains a small cyst near its centre, and another on its upper surface. The upper portion of the tumour contained isolated masses composed of tortuous, closely-crowded columns of small epithelial cells ; but the bulk of the tumour is a round-celled sarcoma.

The tumour was removed in 1877 from a patient aged 67 years. In 1847 Sir W. Fergusson removed from the right side of the lower jaw a "fibroid" tumour containing a cyst of many years' duration. In July 1877 a cystic tumour which had developed in the left half of the lower jaw was operated upon by opening the cysts and scooping out their contents ; in November, and again a year later, the operation was repeated for recurrences of the cystic disease. In November 1879 the patient reappeared with a large solid tumour which had grown on the left side of the jaw in the site of the cystic tumour. This recurrent growth was removed ; it is the specimen preserved. The patient died three months afterwards with recurrence of the tumour in the skin

of the cheek, with a round-cell sarcoma beneath the right biceps muscles, and a tumour of a similar nature in the pelvis.

For a full account of the history of the case, see Heath, "A Thirty-five years' History of a Maxillary Tumour," Brit. Med. Journ. May 22nd, vol. i. 1880, p. 775. The primary tumour is in the Museum of King's College Hospital.

Presented by Christopher Heath, Esq., 1880.

Solid Growths and Tumours.

Hypertrophy.

2205. A lower jaw with a mass of bone, having somewhat the form of an inverted pyramid, attached to the thickened neck of the right condyloid process. The upper surface of the mass, corresponding to the base of the pyramid, is flat and smooth as if it had been covered with fibro-cartilage. Upon its inner side is a deep indentation from which a fissure extends outwards and downwards nearly to the external surface of the bone. The indentation and the fissure constitute the upper boundary of a portion of bone which, from its form and position, might be taken for an enlarged condyle. The right half of the jaw is larger in all its dimensions than the left half, the breadth of the horizontal ramus in front of the angle being double that on the left side, which, from the slenderness of the coronoid and condyloid processes, appears atrophied.

From a middle-aged man, who died with apoplexy. There was a remarkable deformity of the face from the deviation of the symphysis from the middle line; and the projection of the enlarged condyle was considerable. The base of the skull was not examined, and nothing was found in the post-mortem examination except atheroma of the vessels. Nothing unusual had been noticed about his mouth in childhood, nor could any account of an injury be obtained. (See Trans. Path. Soc. vol. xxxiv. 1883.)

Presented by Jeremiah McCarthy, Esq., 1883.

- 2205 A. One half of a similarly enlarged left condyle of a lower jaw. It is composed of cancellous bone with large rounded spaces, and its walls are formed of a thin layer of compact bone. The fissure observed in the preceding does not exist in this specimen.

Removed by operation from a woman, aged 36, whose face had

for ten years become gradually more deformed by the increasing displacement of the chin to the right side and the projection outwards of the left condyloid process. The movements of the jaw were restricted. The length of the left ascending ramus was three inches, of the right one inch and a half.

She had an attack of hemiplegia, implicating the left side of the face, when she was 25 years of age. From this affection her limbs recovered perfectly and her face partially. (See Trans. Path. Soc. vol. xxxiv. 1883.)

Presented by Christopher Heath, Esq., 1883.

Hyperostosis, Exostosis, Osteoma.

2206. The skull of a Cat. The left side of the lower jaw, from the angle to the symphysis, is surrounded by a growth of bone, arranged, for the most part, in thick porous laminæ. The tissue of the jaw is everywhere continuous with that of the tumour. All the molar teeth remain in their places ; but the canine and incisors are removed, and the sockets of the latter are nearly closed.

From the Museum of Joshua Brooke, Esq.

2207. The lower jaw of a Virginian Opossum, on which there is at the anterior part of the left half an oval tumour composed of sponge-like osseous tissue. The tumour has chiefly grown externally, and the outer wall of the jaw is completely involved in it. *Hunterian.*

2208. The left half of the lower jaw of a Kangaroo, within which a large oval tumour has formed and has expanded the walls from the angle to the symphysis. The interior of the tumour is nearly filled with hard porous bone.

Presented by — Escott, Esq.

The three preceding specimens have the appearance of inflammatory new formations rather than that of tumours.

2209. An elliptical osseous outgrowth, about one inch and a half in length, which was removed from the alveolar process and adjoining palatine surface of a superior maxilla. Its external surface is smoothly rounded and covered with mucous

membrane ; its cut surface shows close-textured cancellous bone of natural appearance, in which a minute nodule of dentine or enamel was imbedded.

The specimen was removed with bone-forceps from a gentleman, aged 38, who had noticed an enlargement of the alveolus for eighteen months.

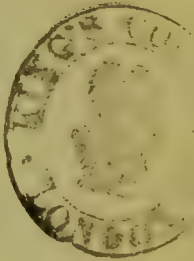
Presented by Christopher Heath, Esq., 1883.

2210. An inferior dentary bone of a Pike with an irregular, rough, and finely spiculated exostosis, about the middle of its alveolar border, which has displaced two of the teeth inwards. There is also a very small exostosis in front of the most posterior tooth.

Presented by Edward Bellamy, Esq.

2211. One of the superior maxillary bones of a Cod fish with a disk-shaped, heavy osseous tumour, about two inches in diameter and half an inch in thickness, which has grown from its inner surface. It has the same external appearance, and probably the same compact ivory-like internal structure, as the tumour of the vertebræ of the Cod described in vol. ii. page 341, No. 1607.

From the Leverian Museum.



2212. Part of the right side of a lower jaw, with sections of a large bony tumour at its angle. The angle of the jaw rests in a deep groove on the middle of the upper surface of the tumour, and in some situations their respective substances are continuous. The tumour projects both below and on each side of the jaw, is of irregular shape, measures nearly three inches in its chief diameter, and is deeply nodulated. It is composed throughout of bone, uniform in texture, and as hard and heavy as ivory.

Presented by John Flint South, Esq.

2213. Half of an exceedingly dense, nodulated, bony tumour which occupied the left orbit and upper part of the superior maxilla, and had deep attachments to the body of the sphenoid

and to the ethmoid bone. It weighed $10\frac{1}{2}$ ounces in the recent state, and was covered with a thin membrane resembling that of the nasal passages and having several polypoid growths attached to it. It is composed of two distinct and loosely connected parts—a superficial hard ivory exostosis, varying in thickness from half an inch to one and a half or two inches; and a deep, more vascular bony tissue, resembling that of the lower end of the femur, but more condensed and heavier. These two portions were united in some places by a loose cartilaginous tissue. The microscopical examination plainly indicated the development of bony tissue by ossification of the deeper stratum of the periosteum; while the spongy tissue appeared to form by rarefaction of the hard bone.

From a man, aged 21, otherwise healthy. He first noticed a swelling at the inner side of the eye twelve years before operation. It gradually increased for six or seven years, but since then had made no progress. The tumour was of bony hardness and invaded the nostrils completely. The eyeball, though much displaced, had tolerably perfect movements and sight was but little impaired. The roof of the mouth and pharynx were not implicated. The tumour was removed with but little loss of blood, and the patient went on well till the third day, when he suddenly became faint and died. The brain and its membranes were healthy; two bony tumours or prominences were found lying in the middle and anterior fossæ of the base of the skull. The larger grew from the left side of the body of the sphenoid and was of the size and shape of a walnut. The other, smaller, was situated at the inner end of the lesser wing of the sphenoid and immediately above the optic nerve. (See Trans. Path. Soc. vol. xix. p. 310.)

Presented by Sir William Fergusson, 1867.

2214. A tumour which involves the whole thickness of the right half of the body of the lower jaw. Two molar teeth are imbedded in its upper margin. It is partly fibrous and partly osseous. On microscopical examination the bone was found to be immature, its lacunæ large, but their canaliculi difficult of detection.

The tumour had been growing for four years before operation. Fifteen years before it was removed, another tumour had been excised from the same spot. (See MS. Notes, vol. i. p. 453.)

Presented by Sir William Fergusson, 1872.

Cartilaginous and Fibro-cartilaginous Tumours.

2215. A lower jaw, enveloped in a large, firm, cartilaginous tumour. The tumour retains somewhat of the form of the jaw, and measures six inches in depth and about two feet in circumference. Some of the molar teeth of the left side are imbedded in a row on its upper surface. The right ascending portion and angle of the jaw have been cut-out from one end of the tumour, and are little altered; the rest of the bone is entirely enclosed within the tumour.

The patient, when she was 32 years old, had a small hard tumour on the right side of the lower jaw, just below the situation of the first molar tooth, which had decayed and had been removed a year before. This tumour gradually enlarged, without pain, and did not produce any suffering till during the last two years of the patient's life, when parts of it ulcerated, large quantities of foetid saliva flowed from the mouth, and it was very difficult for her to carry her food over her tongue to the fauces. The difficulty of swallowing thus produced prevented her from taking sufficient food, and she gradually sank, and died about eight years after the first appearance of the tumour.

A section of the tumour is preserved in No. 335, and described in Vol. I. p. 122.

*From the Museum of Joshua Brookes, Esq.
The history communicated by James Gillman, Esq.*

2216. An irregularly spheroidal tumour about three inches by one and a half, involving the greater part of the superior maxilla. The inferior surface, which is covered by mucous membrane, shows a deep groove, produced by the teeth of the lower jaw. One of the upper teeth is imbedded in the tumour. The middle turbinated bone remains, and a bristle has been passed through the lachrymal duct. On section the tumour appears nearly homogeneous or obscurely fibrous, but is stated to have contained cartilage-cells.

From a woman, aged 47, in whom it had been growing for ten years; it was successfully removed by Mr. Square. (See Heath, 'On Injuries and Diseases of the Jaws,' 2nd ed. p. 249, 1872.)

Presented by Christopher Heath, Esq., 1868.

Fibrous Tumours.

2217. A fibrous tumour of the right side of the lower jaw. It projected both outwards and inwards, encroaching upon the floor of the mouth. The section shows that it extends into the substance of the bone, absorbing the compact and cancellous tissues. The tumour is free towards the alveolar margin of the jaw, but is enclosed within the bone below. It is separated at all parts from the osseous tissue by a fibrous layer forming a kind of capsule. When fresh, the tumour on section appeared gelatinous, traversed by white and glistening bands; and microscopically it was found to be made up of fibrous tissue.

From a sailor, aged 25. Seven years before operation he was struck on the right side of the lower jaw. He did not know if the jaw was fractured, but he was unable to eat solid food for a week after the accident and was never again able to bite any thing hard on that side. Four years afterwards a swelling appeared on the site of the injury. A small growth was observed, and two teeth were removed. Six months later two thin flat scales of bone about half an inch in diameter came away through an opening in the mouth, followed shortly afterwards by another piece. The swelling gradually increased and pus was let out of it shortly before the operation. The tumour was removed with the greater portion of the bone implicated; a small portion in the centre of the bone left behind was scooped out; and the patient rapidly recovered. (For full description and drawings, see "Report on Operative Surgery," Guy's Hospital Reports, 3rd series, vol. xix. 1874, p. 126.)

Presented by Thomas Bryant, Esq., 1873.

2218. A large tumour which occupied and had absorbed the left side of the lower jaw-bone; the condyle with its neck alone remained. It bulges externally, and on section appeared fibrous with a considerable infiltration of calcareous matter.

From a boy, aged 7, in whom the tumour had been observed for only three months. It appeared to grow from the outer surface of the body of the lower jaw, and caused rapid swelling of the face. It increased towards the mouth and pharynx till at length the patient was unable to speak intelligibly. The naked-eye appearances of a section of the tumour, in the recent state, were described as resembling cartilage, but no cartilage could be found on microscopical examination twenty-five years afterwards. The

patient made a good recovery. (See "Case of Disarticulation of the Left Condyle of the Lower Jaw," 'Medico-Chirurgical Transactions,' vol. xxxiii. p. 243.)

Presented by William Beaumont, Esq., 1873.

2219. A fibrous tumour, springing from the anterior and outer part of the left side of the lower jaw. The stump of a decayed tooth is firmly imbedded in its upper portion. The tumour has been laid open, and its cut surface is of a uniform fibrous texture.

From a woman, aged 27. Four years before the operation a molar tooth on the left side of the lower jaw was found to be decayed, and a small tumour, like a pea, appeared on the gum just outside the affected tooth. It grew at first very slowly. Five weeks before operation one tooth was extracted and a fortnight later a second, to the fang of which a small portion of the tumour was attached. The tumour covered all the remaining teeth on the left side of the lower jaw. Mr. Spencer Wells removed the tumour with the body of the jaw from the symphysis to the angle; and the patient made a good recovery. Eight years later she was in excellent health, with scarcely any visible deformity. (See Trans. Path. Soc. vol. xii. p. 217; and Heath, 'On Injuries and Diseases of the Jaws,' 2nd ed. p. 282.)

Presented by Christopher Heath, Esq., 1868.

2220. An oval fibrous tumour, more than an inch in its long diameter, removed from near the angle of the lower jaw. It was imbedded in the jaw and covered with a thin layer of bone, probably formed of the expanded wall of the jaw; a portion of this layer of bone remains upon its surface. The root of the second molar tooth projected into the cavity in which the tumour is imbedded. The tooth, a portion of which is carious, is preserved with the specimen. The tumour contains calcareous matter mixed with its fibrous tissue.

From a woman, aged 26, in whom it had been growing for fifteen months when enucleated by Mr. Buxton Shillitoe. Six weeks previous to the operation an attempt had been made (as the tumour was then thought to be a bony cyst) to produce absorption by cutting through it in the mouth, but its dense structure was then detected, and the endeavour to produce suppuration in it, by firm plugging with lint, failed. It left, after enucleation, a

perfectly smooth cavity, except that the fang of the second molar tooth projected into it; this and the thin walls of the cyst were removed. (See Heath, 'On Injuries and Diseases of the Jaws,' 2nd ed. p. 286 (1872), and Trans. Path. Soc. vol. xvi. p. 223.)

Presented by Christopher Heath, Esq., 1868.

2221. A portion of the body of a lower jaw with a small, lobulated, vascular fibrous tumour springing from its periosteum. The section made through its lower surface exposes thin bony spiculæ.

See Heath, 'On Injuries and Diseases of the Jaws,' 2nd ed. p. 288.

Presented by Christopher Heath, Esq., 1868.

Sarcoma and Cancer.

2222. Part of the right ramus of a lower jaw, in which has grown a tumour, which has caused the absorption of a considerable portion of the entire thickness of the bone. The growth projects on all sides, but chiefly externally. It forms a lobulated mass rising into the mouth, beneath the mucous membrane of the gum, in the situation of the molar teeth. The canine and the first bicuspid teeth are preserved, the latter completely enveloped by the growth. The other molars are absent, the bone in which they were implanted being entirely destroyed. The cut surface of the tumour shows a pale homogeneous basis intersected by undulating fibrous bands. It has the appearance of a spindle-celled sarcoma.

Presented by Charles G. Guthrie, Esq.

2223. Part of the right side of a lower jaw, from the angle to the canine tooth, which, with a tumour formed upon it, was removed by operation. The tumour implicates nearly all the portion of the jaw which has been removed, and projects on both sides of it, but especially on its anterior and outer aspect. It consists of a firm, pale, and nearly homogeneous substance, with an obscurely fibrous texture, and seems to have originated in the interior of the jaw, the anterior wall of which is entirely destroyed, while the

posterior is expanded over the tumour. It has grown up around the molar and bicuspid teeth, and at this part its surface projecting into the mouth was soft and fungous.

The patient was a man 26 years old. The disease had been observed for three years. Before the removal of the portion of the jaw, the part of the tumour which projected into the mouth had been cut-off and cauterized, but without benefit. The patient recovered after the operation.

From the Museum of Robert Liston, Esq.

2224. Part of the right side of a lower jaw, from the angle to the first bicuspid tooth, which, with a tumour formed upon it, was removed by operation. A vertical section from behind forwards has been made through the whole mass. The tumour, which measures about two inches in its greatest diameter, is situated almost entirely on the anterior surface of the jaw, projecting forwards and upwards, and extending along nearly the whole length of the portion removed. The greater part of the tumour consists of a pale, firm, and compact substance; at its base it is osseous, and so closely attached to the anterior surface of the jaw, from which it appears to have risen, that the outline of the latter can scarcely be made out. In its growth it has displaced the last two molar teeth; but the first molar and the second bicuspid remain.

From the Museum of Robert Liston, Esq.

2225. The right ascending portion, with the condyle and coronoid process, of the same lower jaw as that from which the preceding specimen was taken. A tumour of the same characters as that just described has been formed on the outer side of the ascending portion of the bone. The outer wall of this part is involved in the tumour; the inner wall and the coronoid process and condyle are sound.

The patient was a delicate woman 30 years old, who had been subject to toothache from her infancy. Nine years before the appearance of any tumour she received a severe blow on the right cheek. The tumour, No. 2224, was removed five months after it was first observed, its growth having been accompanied with lancinating pain in the jaw and cheek, and continual headache.

No portion of the tumour appears to have been left; but the disease reappeared in the ramus of the jaw, and the parts preserved in No. 2225 were removed ten months after the first operation.

From the Museum of Robert Liston, Esq.

2226. "Part of a tumour taken out of the substance of the lower jaw of Miss Maitland."—*Hunterian MS. Catalogue.*

2227. Another portion of the same tumour. It has a firm, compact, homogeneous, pale texture; one half is covered with a thin layer of cancellous bone, and the other half with mucous membrane. It appears to have been developed within the lower jaw. *Hunterian.*

2228. A section of a tumour, probably of the same kind as that last described, "from the inside of the mouth of a young woman:" half of it is invested with a thin shell of bone, which has been partly separated from its surface. *Hunterian.*

2229. Sections of an oval tumour, with a broad base, removed from the interior of the mouth. Its surface is covered with healthy mucous membrane, and it is composed of a soft, greyish, semitransparent tissue, with small plates and fibres of bone thickly but irregularly scattered through it. *Hunterian.*

2230. Part of a lower jaw, including the left condyle, the alveolus of the right first molar tooth, and all the intermediate parts, which, with an enormous tumour upon them, were removed by operation. The relations of the several parts may be recognized by observing the positions of the condyle, the tendon of the left temporal muscle, and the incisor and canine teeth, which are still fixed in their alveoli. The left ascending portion and side of the jaw, as far as the canine tooth, are completely enclosed by the tumour, and it covers both surfaces of the jaw, as far as

the right canine tooth. A round lobulated mass projects downwards and forwards; and in the opposite directions the tumour projects into the mouth with a rough *fungous* surface, in which a displaced molar tooth is seen. The interior of the tumour is indistinctly lobulated, composed of round masses connected by cellular tissue, and of a soft texture; it is invested by a thick capsule.

The patient was a man 45 years old, in whom the tumour had grown slowly for seven years. He died of erysipelas on the sixth day after the operation.

From the Museum of Robert Liston, Esq.

2230 A. Part of the head of a girl, with a large recurrent fibroid tumour [spindle-celled sarcoma] occupying the greater portion of the left side of the head. The tumour had originated in the left maxillary region; it projects with a sloughing surface into the mouth, completely fills the pharynx, depresses the epiglottis, and has grown along the anterior surface of the spine and the adjoining left outer surface of the cranium. Its external surface is smoothly rounded, and divided by a transverse groove into an upper and a lower lobe, of which the latter is the larger. Sloughing of small circular portions of the skin has occurred on the upper lobe; and on the most prominent part of both lobes are large roundish cicatrices, probably from previous operations. The tumour is composed of a pale greyish-white dense tissue, intersected by bundles of white fibres. It is firm and elastic, except in the centre of the lower lobe, where there is an irregular cavity, formed by the softening of a portion of the tissue.

The following account of the case accompanied the specimen:—

“The girl submitted to three operations; but, unfortunately, after each a recurrence of the disease speedily followed. She always made a rapid recovery, soon became fat, and enjoyed in the intervals between the operations almost robust health.

“The first operation was performed on the 4th of October, 1858, when she was admitted as a patient in the Great Northern Hospital, under my care. She had then what might be termed a large epulis growing from the anterior and inner surface of the ascending ramus of the lower jaw of the left side, extending from a point near the angle to close upon the condyle. I removed the

tumour with the aid of a pair of bone forceps, cutting away, as I then hoped, all its bony attachments. In the following month (November), about six weeks after the first operation, a small elastic mass appeared in the temporal fossa of the affected side; but the jaw was apparently free. This I cut down upon, and excised; but during the operation I found that it had evidently sprung from its original site, and, extending upwards, had passed beneath the zygoma into the temporal fossa.

"The last operation was in June of last year (1859), when, in consequence of the great size the tumour had attained, the inability of the girl to open her mouth, and the great difficulty she experienced in deglutition, I determined to remove a portion of the [inferior] maxilla. This I did by sawing through the bone at its angle, and then disarticulating it.

"After the removal of this portion of the jaw, I discovered that the tumour had formed so many attachments to the periosteum of the bones at the base of the skull, that I was compelled to leave some of the disease behind. The rough and thickened condition of the periosteum covering the portion of bone which was removed shows clearly the site from which the tumour grew. Portions of the tumour were kindly examined microscopically by Mr. Paget, Mr. Savory, and Mr. Hulke; and all concurred in assigning it to the class of recurring fibroid tumours.

"At the latter part of November (1859) the girl was re-admitted into the Hospital to be under my observation. The tumour had again grown to a large size, and, from the space it occupied in her mouth, interfered much with her taking her proper amount of nourishment. It now began to soften and to ulcerate on its surface, both externally and within the mouth; and occasionally very alarming hæmorrhage would take place, such as to threaten immediate dissolution; but from all these she rallied. Within the mouth large sloughs would occasionally separate, allowing her to recruit her health, by enabling her to take additional nourishment.

"Just before Christmas 1859 she left the Hospital to stay with her parents, and from that period I did not again see her alive; but I am informed by her mother that, the tumour continuing to increase, she was at last scarcely able to swallow any food, and what little she did was in a fluid form and in very small quantity. Gradually getting weaker, she ultimately died exhausted; and from the fearfully emaciated condition in which I found the body after death, I feel convinced that she died of inanition."

A figure of the head is published in the 'Transactions of the Pathological Society,' vol. xi. p. 262.

Presented by George Lawson, Esq.

2231. Two medullary tumours, probably round-celled sarcomata, of the lower jaw, from a child. The upper specimen, which was the first removed, has destroyed the whole of the right

side of the body of the jaw and a great part of its ramus ; anteriorly the milk canine and molar teeth project from the growth. The lower specimen, as here mounted, is seen to involve the jaw in the neighbourhood of the symphysis, and a portion of the bone as far as the socket of the first molar remains attached to it, as removed by operation. Both portions of the growth are lobulated externally, and on section uniformly white and slightly granular, with cysts and fissures caused by the breaking-down of its tissue.

From a girl aged 5, the tenth out of a family of eleven healthy children ; her parents were strong and robust. Seven weeks before the first operation her mother noticed that the second temporary right molar tooth was raised, and the gums looked swollen. The tooth was extracted, but the swelling increased and grew rapidly. It was removed, but recurred in six weeks, rendering another operation necessary. She appeared to make a good recovery, but died about three months after the operation from a rapid return of the disease at the symphysis and in the masseteric region. For full details see Heath, 'On Injuries and Diseases of the Jaws,' 2nd ed. pp. 319-413 (1872).

Presented by Christopher Heath, Esq., 1868.

- 2231 A. A large lobulated tumour surrounding the right side of the lower jaw, the bone being in a state of necrosis and the condyle and part of the coronoid process entirely destroyed. The upper part of the tumour, which had been incised during lifetime, has broken down considerably ; at the section through the symphysis the relation of the periosteum to the tumour is very plainly seen, as in this region that membrane has separated from the necrosed bone.

It was removed *post-mortem* from a man who died of the disease when it had advanced too far for operative interference. The tumour had commenced as a swelling of the gum in the neighbourhood of the molar teeth ; this was thought, by a dentist, to depend on the irritation of a stump. The swelling was therefore laid open, and a search made for the suspected stumps, without result. The incised tumour rapidly grew and discharged foetid matter. (See Heath, 'On Injuries and Diseases of the Jaws,' 2nd ed. p. 322, 1872.)

Presented by Christopher Heath, Esq., 1868.

2232. Sections of two myeloid tumours developed symmetrically in the angles of a lower jaw. Their outer surfaces are covered by the external layer of compact tissue of the bone, which they have expanded and thinned.

From a boy aged $7\frac{1}{2}$, with rickety legs, but well nourished and healthy when the growths were removed. The growths appeared when he was a year and a half old and increased slowly and painlessly. "He had a good deal of difficulty with his teeth." The right tumour was sawn-off and some of its substance, which filled the interior of the bone, was gouged away; a month later the left was removed in a similar manner. The patient made a good recovery. (For a full account of the case see Heath, 'On Injuries and Diseases of the Jaws,' 2nd ed. pp. 310 & 409, 1872).

Presented by Christopher Heath, Esq., 1872.

2233. A portion of an inferior maxilla, from near the symphysis, within which lies a fibro-sarcoma surrounded by a thin shell of bone consisting of the expanded walls of the jaw. The tumour is removed from the section of the expanded jaw occupying the lower part of the specimen in order to expose a small irregular mass projecting into the upper part of the cavity, and having the appearance of a misplaced ill-developed denticle. The tumour was firmly attached to this body by fibrous tissue, but was loosely connected with its bony capsule.

It consisted microscopically of spindle-cells and nuclei, developed in places into ill-formed fibrous tissue. See MS. Notes, vol. iii. p. 193.

Presented by Thomas Smith, Esq., 1881.

2234. A large lobulated tumour involving the lower jaw from the left angle to the middle of the right ramus. It is a mass of sarcomatous tissue, with here and there small nodules of bone; and a few small cysts interspersed. The outer compact layer of the bone is much expanded and in parts destroyed. The teeth have been irregularly pushed upwards on the upper surface of the tumour and fungous granulations project from its front portion. Several rounded epulis-like masses are attached to the posterior portion of its alveolar border. It measured from the lobule of the ear

round the chin to the opposite lobule $19\frac{1}{2}$ inches, and from the edge of the lower lip to the *pomum Adami* over the chin 13 inches; it weighed 4 lbs. 6 oz.

The tumour was mainly composed of sarcoma-tissue, consisting of spindle-shaped and round nuclei, imbedded in a homogeneous or fibrillar connective tissue. Irregularly shaped masses and columns of epithelial cells of various sizes were scattered scantily throughout it. The cells forming them were for the most part small and round, but those of the outer layer were elongated.

From a man aged 32. Eleven years before death he felt severe pain in the right jaw and noticed a small hard swelling, about the size of a nut, just below the right canine tooth, which was not decayed. All the teeth in its vicinity were healthy. The swelling continued of the same size for five or six years, during the latter part of which time it was painless. Then it began to slowly enlarge, and after a violent blow on the face it grew very rapidly. A charlatan burnt the inside of the mouth with acid; another applied a white ointment to the surface of the tumour, which caused the skin to ulcerate. A year before it was removed the portion of the tumour near the right angle of the jaw rapidly increased, and in a short time the skin gave way, and a quantity of offensive pus was discharged. Four years after the injury the jaw was removed. The tumour then bulged down to the sternum, but no enlarged glands could be detected in the neck. There was but little loss of blood. The patient did well till a rigor occurred on the third day; on the sixth, after temporary improvement, he died somewhat suddenly.

For a drawing of the patient taken before operation, and for a full account of the case, see Heath, 'On Injuries and Diseases of the Jaw,' 2nd ed. p. 297, and Appendix, Case XXV., and Trans. Path. Soc. vol. xix. p. 307; and Brit. Med. Journ. *op. cit.* Jan. 6th, 1883, p. 4.

Presented by Christopher Heath, Esq., 1868.

2235. The right superior maxilla, with a soft white tumour filling the antrum, and which protruded into the nose and orbit. The morbid growth is unattached to the wall of the antrum except behind, where it extends into the substance of the gum and palate.

Microscopically it consisted of closely packed and very tortuous columns of small round epithelium; a few of them had a lumen

around which the cells were arranged in a regular manner, as in tubular glands. The stroma was composed of sarcomatous tissue.

Removed from a gentleman, aged 51 years, who five years before the operation noticed "lumps in the hard palate," which were lanced, but never healed, although appearing to diminish in size. About four years later his right nostril became blocked-up, and there was some protrusion of the eye. The disease returned in the skin as a round and spindle-celled sarcoma. This was removed; but a few months afterwards the patient again presented himself with a recurrent tumour possessing the same microscopic characters.

Presented by Christopher Heath, Esq., 1883.

2236. A left superior maxillary bone, with a large tumour, removed by operation. The positions of the parts may be recognized by their relations to the left second incisor and canine teeth in front of the mass, and to the section of the left zygoma, with a portion of the tendon of the masseter muscle: all the other teeth on the left side have been removed. The tumour is irregular in its form, deeply lobed, but smoothly rounded on all its surfaces. Towards the palate it presents a circular slightly concave surface about four inches in diameter, the borders of which project from every part of the cavity of the mouth. It is composed of a white or pale yellow, firm, homogeneous substance; its cut surface has a glistening, transparent aspect; it is traversed in some parts by short, undulating, opaque-white fibres; and minute portions of bone are scattered through it, but are not arranged in any definite manner. The cut surfaces of the bones and all the adjacent tissues are healthy.

The patient, Ann Struther, was 21 years old. The tumour first appeared four years before its final removal, with pain in the left side of the face and head, which was ascribed to cold. It grew first on the outer side of the gum, and in six months after its first appearance, when it had attained the size of the end of a thumb, it was removed. It reappeared, and after eighteen months more, when it had gained the size of a hen's egg, it was excised with a portion of the alveolar process. Two or three weeks afterwards, however, it appeared again, and in the next two years attained its present size. In the final operation the whole superior maxillary bone was removed, together with the malar and inferior spongy bones, and the greater part of the zygoma. The patient recovered rapidly, and was in good health two years after the operation.

The details of the case are given in Mr. Liston's "Observations on some Tumours of the Mouth and Jaws," in the 'Medico-Chirurgical Transactions,' vol. xx. p. 189 (London, 1837); and in the 'Lancet,' March 5, 1836. Sketches of the appearance of the patient before and after the operation are given there, and in Mr. Liston's 'Practical Surgery,' p. 311, ed. 1846, in which there is also a sketch of the tumour at page 308.

From the Museum of Robert Liston, Esq.

2237. The greater part of a right superior maxilla. A spheroidal tumour completely surrounds it, excepting the alveolar and palatine processes and the portion adjacent to the anterior nasal spine. The substance of the bone cannot be distinguished on the cut surface of the tumour, which is composed of a homogeneous substance intersected with narrow fibrous fasciculi.

From a girl aged 18, who recovered from the operation.

Presented by Dr. William Bird, 1866.

2238. The greater part of a right superior maxillary bone, with a tumour, removed by operation. The tumour, which is affixed to the alveolar border, near the molar teeth, extends inwards, so as to cover the palatine portion of the jaw, and outwards, so as to conceal all the bicuspid and molar teeth with the exception of the last. The walls of the antrum are pressed inwards, but its interior is healthy. The cavity of the nose is not implicated. The tumour has a lobulated but smooth surface, and is composed of a firm, pale substance, very like that in No. 2236.

The patient was a woman 30 years old. The tumour was first observed four years before its removal. A few months after the extraction of a decayed molar tooth, a small hard fleshy swelling projected from the socket. It gradually increased in size, and became lobulated, and its growth was accompanied with a constant dull pain. Caustics were applied to it, and accelerated its growth. The operation of removal was successful.

The case is reported in the 'Lancet,' April 22, 1837.

From the Museum of Robert Liston, Esq.

2239. Sections of a left superior maxillary bone, with a tumour

formed upon it, removed by operation. A vertical section has been made from before backwards through the whole mass. The left wall of the nasal cavities, part of the lower wall of the orbit, part of the hard palate, and the second incisor and two following teeth of the left side, are shown in the upper section. The tumour extends from the posterior part of the jaw to the second bicuspid tooth ; fills the whole of the antrum except a small portion at its upper part ; and projects downwards and forwards with a smoothly rounded surface. Inferiorly it is covered with the mucous membrane of the hard palate and alveolus ; anteriorly by parts of the buccinator muscle and the other deep tissues of the cheek ; superiorly and internally by the walls of the orbit and of the nose. It is composed of a pale and white dense tissue, intersected and divided into lobes by slender bundles of circling and undulating opaque fibres. It is firm and elastic at every part except its centre and near the alveolus, where it is somewhat softer. A small cavity at the upper part of the tumour, where it was punctured, contained some pus.

The patient, Janet Campbell, was 26 years old, and the disease, which she believed originated in a blow on the cheek, had been four years in progress. Ten weeks after the blow one of the molar teeth gradually loosened and fell out ; a small tumour then projected from the surrounding alveolus, and gradually extended, involving the adjacent parts of the gum, and loosening the teeth. Four months after the appearance of the tumour the teeth of the left side were extracted, the antrum was perforated, and some pus was discharged from it ; but the tumour enlarged still more, and formed a hard incompressible swelling in the cheek. During the four years after the operation there was no return of the disease.

The case is published in Mr. Liston's " Observations on Tumours of the Mouth and Jaws," in the ' Medico-Chirurgical Transactions,' vol. xx. p. 184 (London, 1837).

From the Museum of Robert Liston, Esq.

2240. Part of the left side of a woman's face, with a large tumour on the superior maxillary bone, removed after death. The tumour is of an irregular form, superficially lobed, smoothly rounded on all its surface, concave and circular in the part directed to the cavity of the mouth.

It is about six inches in its chief diameter, and involves the whole of the upper jaw, projecting far in every direction, and, especially, upwards and backwards into the orbit, and downwards upon the lower jaw, which is deeply imbedded in its substance. Like that last described, it is composed of a pale firm substance, intersected by wavy and arched white fibrous lines ; and is altogether very like the common fibrous tumour of the uterus.

The disease was deemed too far advanced to be removed with safety during life.

From the Museum of Robert Liston, Esq.

2241. A left superior maxillary bone, with an enormous tumour, and the integuments over them, which were removed by operation. The several parts involved in the disease are not shown, but the mass is suspended in the position which it had before removal, the integuments covering the distended cheek being placed to the left hand. The tumour is of irregular form, superficially lobed, and smoothly rounded in every part. Its diameters are—vertically seven inches, transversely seven inches, from before backwards nearly six inches ; the portion of integument removed with it measures about twelve inches in length and ten in breadth. Towards the mouth the tumour presents a circular concave surface, projecting on every side beyond the palate. A portion cut from the left side of the tumour shows that it is composed of a pale, whitish, firm, compact, and homogeneous substance, bearing much general resemblance to the five preceding specimens, especially to those in which the fibrous texture is least marked.

The patient, Mrs. Fraser, was 40 years old. The tumour began to grow six years before its removal, in consequence of a blow on the region of the antrum. Its progress at first was slow and not painful, but at the end of two years a distinct tumour was felt in the cheek. During the next two years it grew rapidly, especially during a period of gestation, but still without much pain. In the fifth year of its growth she bore a second child, after which the catamenia ceased to flow, and the tumour was subject to monthly augmentations of its vascularity, and slight hæmorrhages occurred from its inner, though not ulcerated surface, and from the adjacent parts of the gum. The patient recovered quickly from the

operation, and was in good health twelve years afterwards. Only a small aperture in the cheek remained, which, as well as an aperture in the palate, was capable of being filled up by an artificial palate.

The details of the case are given in Mr. Liston's "Observations on some Tumours of the Mouth and Jaws," in the 'Medico-Chirurgical Transactions,' vol. xx. p. 186 (London, 1837); and sketches of the patient are there, and in his 'Practical Surgery,' ed. 1846, p. 309.

From the Museum of Robert Liston, Esq.

2242. A tumour of the left superior maxilla. It has undergone a calcareous change in the centre, and a central calcareous sequestrum has separated from the fibrous tissue, which forms for it a thick-walled capsule. A great part of the tumour is surrounded by a thin layer of bone, probably the wall of the antrum, from the periosteum of which it appears to have originated. The sequestrum contains "acicular crystals of mineral matter."

From a woman aged 50, in whom the tumour had been growing for eight years. The specimen is referred to in Mr. Heath's 'Injuries and Diseases of the Jaws,' 2nd ed. p. 227 (1872).

Presented by Sir William Fergusson, 1872.

2243. A lobulated tumour occupying the greater part of the superior maxilla, the outer wall of which is completely lost. It bulges freely outwards, as well as internally within the nasal fossæ, where it is much lobulated, and towards the pterygo-maxillary fossa. The greater part of the malar bone is also involved in the tumour. The cut surface of the tumour is uniform and homogeneous. In its deepest portion are two small cavities formed by breaking-down of the tissue.

From a man aged 44, of healthy aspect. The tumour, after having been noticed, from the swelling which it produced on the cheek, seventeen weeks, formed "a large rounded tumour of the right cheek of the size of an orange, extending from the external angular process of the frontal bone and zygoma above to the angle of the mouth below (almost completely closing the right eye), and from the side of the nose to the ramus of the lower jaw. The colour of the integument was natural except at the upper part below the eye, where it presented a rather livid appearance and several veins, not of large size. It was very firm to the touch, but elastic, espe-

cially at the outer part. Pressure and handling caused little or no pain. The interior of the mouth on the right side, from the alveolar process (which was concealed by the growth or embraced in it) to the inside of the distended cheek, presented a large excavated sore of a greyish sloughy aspect and fœtid odour... There were no enlarged glands below the jaw. The tumour was excised by Mr. Craven, of Hull, and the patient recovered, but died fifteen months later from a recurrence of the disease. Under the microscope the juice scraped off the cut surface showed no fibrous element, but simply a mass of apparently broken-up cells and granular matter." (See Heath, 'On Injuries and Diseases of the Jaws,' 2nd ed. p. 264, 1872.)

Presented by Christopher Heath, Esq., 1868.

2244. The greater part of a left superior maxillary bone with a tumour formed in the antrum, removed by operation. The tumour measures about two inches in its greatest diameter, and projects forwards over the right canine and bicuspid teeth. It is pale, soft, and homogeneous, and the surface of its section is like that of brain. At the upper part its tissue is broken and was mixed with blood; in its recent state it was more brain-like.

The patient, William Thomson, was 16 years old. The disease had been observed for two years. He had often suffered pain in the situation of the first molar tooth, which had been in a decayed state for a considerable time previous to his discovering any swelling of the cheek. During the two months preceding the operation the tumour had grown rapidly. Three years and a half after its removal the patient was in good health.

See Mr. Liston's "Observations on some Tumours of the Mouth and Jaws," in the 'Medico-Chirurgical Transactions,' vol. xx. p. 180 (London, 1837), where this case is related as an example of malignant tumour in the antrum, removed in an early stage with permanent success.

From the Museum of Robert Liston, Esq.

2245. The left superior maxilla macerated, showing a calcified tumour springing from its anterior part. The minute structure of the tumour, in the recent state, was described as resembling scirrhus cancer.

From a woman aged 21. The tumour was removed, but recurred on the opposite side thirteen months later (see No. 2245 A). The patient was in perfect health two years after the second operation. (See Heath, 'On Injuries and Diseases of the Jaws,' 2nd ed. p. 278, 1872.)



- 2245 A. The right superior maxilla from the same patient as 2245. The growth involves the anterior portion, extending into the nasal fossæ.

Presented by Christopher Heath, Esq., 1867.

- 2245 B. Part of a head in which, in consequence of the growth of a tumour, probably of medullary nature, in the left antrum, there has been a complete removal of the floor of the orbit and of the hard palate of the same side. The outer part of the left superior maxillary bone and the inferior turbinated bone have also been destroyed. There is ulceration on both sides of the septum of the nose ; and a great aperture in the cheek, extending from the upper lip to the margin of the lower eyelid, and from the side of the nose to the malar bone, has exposed the effects of the destruction of the internal parts.

The patient was a soldier, 60 years old. He had had disease of his lungs for six months before his death and had nearly died with hæmoptysis. The tumour of the antrum was first observed about three months before his death. It protruded at both the cheek and the palate, and formed large, sloughing, and bleeding fungous growths in both these situations ; but before his death the whole of the morbid growths sloughed away, and the ulcerative process alone made progress.

The lungs, after death, were found full of medullary tumours. The liver was large and granulated. The other organs were healthy.

From the Museum of George Langstaff, Esq.

2246. A morbid growth, probably epitheliomatous, springing from the mucous membrane of the antrum. In some parts it is ragged and has a papillary appearance.

Under the microscope the mucous membrane of the antrum was observed to be exceedingly thickened by an overgrowth of epithelium, with cells, for the most part, of an elongated form.

Presented by Christopher Heath, Esq., 1882.

2247. A portion of a superior maxilla affected with pavement-celled epithelioma.

The growth consists of an abundant matrix of connective tissue,

crowded with nuclei, and enclosing alveoli filled with squamous epithelium.

Presented by Christopher Heath, Esq., 1882.

- 2247 A. A part of the superior maxilla, with a papillary growth, probably an epithelioma, covering the interior of the antrum. Its structure "resembled that of the upper strata of a mucous membrane, from which it is probably an outgrowth." In the upper part of the bottle is a polypoid growth, removed from the posterior nares at the time of the operation for the papillary tumour.

From a gentleman aged 76. Two years before the removal of this tumour he found that a growth was forming in the right nostril; this gave no pain, but kept-up a constant discharge. About eighteen months later a surgeon partly removed it, but the discharge afterwards increased. A few months afterwards a fungous growth was detected in the right nostril, the whole right maxilla was swollen, thin pus was discharged from one or two points near the eye, and a similar growth was found on the site of the upper molars which had fallen out; a probe could be passed by its side into the antrum. After operation the patient died on the fifth day from congestion of the lungs. (See Heath, 'On Injuries and Diseases of the Jaws,' 2nd ed. pp. 219 and 391, 1872.)

Presented by Christopher Heath, Esq., 1868.

2248. A right superior maxilla with part of the malar bone and the hard palate. The maxilla is partly destroyed by a medullary tumour, large lobules from which project forwards, pushing outwards the zygomatici and the levator labii superioris. Towards the nasal fossa the tumour consists of a mass of papillary growths; inferiorly it projects over the alveolus, the posterior part of which is destroyed. This portion has been laid open, and on section appears white, smooth, and uniform.

This tumour, which first showed itself in the gums, was removed by Mr. Craven, but within a year the disease returned and proved fatal. (See Heath, 'On Injuries and Diseases of the Jaws,' 2nd ed. p. 265, 1872.)

Presented by Christopher Heath, Esq., 1868.

2249. A portion of a lower jaw with an epithelioma involving chiefly the soft parts on its alveolar and inner surfaces.

The gum at the seat of disease is thickened, and its surface is warty or papillary.

Removed, April 1881, from a patient, aged 54, who had been operated on for the same disease in 1880.

Presented by Christopher Heath, Esq., 1882.

- 2249 A. A portion of a lower jaw excised on account of an epithelioma involving the gum and soft structures on its outer surface. The disease recurred after the removal of the preceding specimen, and was removed November 1881.

In microscopic structure the growth consisted of small pavement-epithelium, in places arranged in whorls, but the cells composing them showed no tendency to become cornified.

Presented by Christopher Heath, Esq., 1882.

- 2250, 2250 A, and 2250 B. Portions of a head with a large medullary growth, probably originating from the walls of the right antrum. Part of the growth forms a smooth tumour, which projects from the right maxillary region, involving the lower lid, so as completely to hide the eye on that side. It also projects into the mouth, and has displaced the tip of the nose towards the left side. The greater portion of the growth is soft, pale, and homogeneous; and the surface of its section is like that of brain. The head has been longitudinally divided into a central and two lateral portions.

2250. The middle portion of the head.

- 2250 A. The right side of the head. The relations of the several parts in the cut surface may be recognized by observing the position of the eyeball and of the cervical vertebræ. The bones of the face, the lower jaw excepted, have disappeared; their place is occupied by the medullary growth. The bones of the base of the cranium, the adjoining vertebræ, and the lower jaw are soft, and filled with medullary growth. Several large, yellow, opaque and infiltrated glands are seen close upon the muscles in front of the spine.

2250 B. The left side of the head. The relations of the different parts will be understood by observing the position of the tongue, the nasal cavities, and the cervical vertebræ. The sphenoidal cells, the pharynx, larynx, and the cavity of the mouth are laid open. The medullary mass occupies the space between the roof of the mouth and the base of the cranium. The uvula and soft palate are thickened by infiltration with medullary matter. The tongue and other soft parts attached to the lower jaw appear to be unaffected by the disease.

From a woman, 55 years of age, a working upholsteress, who died April 27, 1860. She is stated to have experienced uneasy sensations in her face for three years; but the tumour did not display itself externally until ten months before her death. After that time it grew rapidly.

Presented by Edwin E. Sass, Esq.

Tumours attached to the Jaws.

2251. Part of the left ramus of a lower jaw with a large tumour, of an indistinctly fibrous texture, adhering to the periosteum, but not involving the bone, which near the tumour is slightly roughened.

Microscopically examined in 1883, the tumour was composed of very small round cells, with very little stroma; it is probably a lympho-sarcoma, and may have originated in the submaxillary lymphatic glands.

From a countryman, aged 50, of large frame and intemperate habits. He had noticed a swelling near the left submaxillary gland for over seven years; this had become painful, and had rapidly increased in size for the last few months before operation. Acute plunging pains passed from the tumour to the ear and the side of the head. The tumour was removed by Mr. Wilkes, of Salisbury. The patient got-on well till the third week, when an abscess formed under the chin, discharged into the mouth and subsided; but pyæmia set-in, and proved fatal a month after the operation. (See Heath, 'On Injuries and Diseases of the Jaws,' 2nd ed. p. 415, 1872, and Trans. Path. Soc. vol. xiii. p. 236.)

Presented by Christopher Heath, Esq., 1868.

2252. The right half of a lower jaw-bone, having on its inner aspect a tumour closely connected with, but easily separated

from, the periosteum. It is lobulated externally, and on section shows a large cavity probably caused by breaking-down of its tissue.

Its minute structure, examined in 1883, consisted of rounded masses of closely-packed round or oval epithelium with large nuclei, and not of the pavement-cell type. The stroma was not abundant, and was of a distinctly fibrous nature. The growth probably arose in some structure external to the jaw.

From a man, aged 67, from whom it was removed, together with half of the jaw, by Mr. Coates, of Salisbury. The patient sank eleven days after the operation. (See Heath, 'On Injuries and Diseases of the Jaws,' 2nd ed. p. 321, 1872.)

Presented by Christopher Heath, Esq., 1868.

- 2253.** A lower jaw with a large tumour formed upon it, and implicating the tongue, larynx, and other adjacent parts. The tumour extends from the right angle of the jaw to the right canine tooth, and all the intervening part of the jaw is concealed within it. Anteriorly and below it forms a great nodulated mass, involving the muscles of the tongue and the upper part of the neck; posteriorly and above it projects far into the mouth, pushing aside the tongue and pressing backwards upon the larynx. It is composed of soft medullary substance, which in several situations hangs on its ulcerated surface in long shreds.

From a lad, 18 years old, in whom the tumour was first perceived a year before his death. It seemed to commence in a gland in the cheek, which, as it enlarged, became adherent to the jaw. At the last the tumour increased very rapidly, and destroyed life by suffocation and exhaustion.

From the Museum of Robert Liston, Esq.

- 2254.** The left half of a lower jaw-bone. A great part of its horizontal portion has been destroyed by the growth of a firm substance, which appears to have been developed on the exterior of the bone and to have gradually produced ulceration and necrosis of it. At the angle of the jaw, adjacent to the growth, the bone is deeply and irregularly ulcerated; and near the symphysis several portions of it are completely detached. The bicuspid tooth remains in its

alveolus: the others fell out, and of these, two which are preserved have some osseous deposits upon their fangs.

From a man 45 years of age. The disease began in a hard enlargement in the situation of the submaxillary gland. After increasing for a year it extended into the mouth, where a fungous growth protruded, and the teeth and several portions of the jaw were removed. After this, the integuments of the cheek sloughed and rapidly ulcerated, and the patient was gradually exhausted. After death secondary growths were found in the lungs and liver.

From the Museum of George Langstaff, Esq.

Series XVII. INJURIES AND DISEASES OF THE LIPS AND CHEEKS.

- Adhesions : 2255.
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 - Fibro-Adenoma : 2261.
 - Papillary : 2262.
 - Epithelioma : 2263, 2264.
 - Rodent Ulcer : 2265.
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2255. The lower part of a mouth, in which the tongue is in several places adherent to the lower lip and left cheek.

“*Feb. 3rd, 1758.*—I dissected the body of a woman that died in child-bed, and had been delirious for some time.

“On looking into the mouth I found the edge of the tongue adhering on the right side to the under lip of the same side at two different places. One of the adhesions is about half an inch in breadth; the other less, and pretty near the tip. All the bases of the teeth on that side, beyond the canine, are rotten; and under the adhesion the stumps are crusted over with a cretaceous matter. These adhesions are very strong, and by injecting the lingual and genial arteries they were well injected. A little way nearer the tip than the frænum, the lower surface of the tongue adheres to the gum on the inside of the dentes incisores: and on the left side of the tongue its edge adheres to the gum on the inside of the semi-grinders very strongly, so that the tongue adhered almost all round.”—*Hunterian MS. Account of the Dissection of Morbid Bodies*, No. 46.

2256. A portion of the cheek of a young woman, exhibiting extensive sloughing through its whole thickness.

The disease was the effect of mercury administered in jaundice. The patient, who was of scrofulous habit, died on the sixth day from the commencement of the ptyalism.

The case is fully recorded in the ‘Catalogue of the . . . Anatomical Museum of George Langstaff,’ p. 477 (London, 1842).

From the Museum of George Langstaff, Esq.

2257. The lower part of a face, in which nearly all the skin around the mouth, and the lower parts of the alæ and septum of the nose, have been destroyed by ulceration. The form of the ulcer is symmetrical; its margin is abrupt and uneven, but not thickened or elevated; its base is nearly level, and bears no trace of granulations; but both it and all the adjacent parts appear, by the minute injection of the vessels, to be very vascular. The ulceration has extended a little to the inner surface of the upper lip; all the labial glands are large.

Microscopic examination in the present (1883) condition of the specimen throws little light on the nature of the ulceration. The epithelium near the margin shows inflammatory changes, some of the cells having been destroyed by vacuolation. The interpapillary indippings of the epithelium are much elongated, probably from the enlargement of the papilla of the corium. The base of the ulcer is not infiltrated with epithelium, and no giant-cells are visible.

From the Museum of R. B. Walker, Esq.

2258. Part of the lips and cheek of a patient with confluent small-pox. It was marked "Small-pox on the inside of the mouth;" but there is no appearance of pustules on the mucous membrane; only it is unnaturally wrinkled, and its papillæ are very large.

Hunterian.

2259. A specimen, marked "Small-pox on the roof of the mouth," but not exhibiting any appearance of eruption.

Hunterian.

2260. A small lobulated osteo-chondroma from the lip, with the superjacent skin. The greater part of the tumour consists of bone, but nodules of grey hyaline cartilage occupy the lower part of the section, and fibro-cellular, adipose, and mucous tissue are also present.

It had been growing four years, had given no pain, and was only inconvenient from its size.

The case is recorded in the Transactions of the Path. Soc. of London, vol. xxviii. p. 213.

Presented by John Gay, Esq., 1876.

2261. A lobulated fibrous and glandular tumour, about an inch in diameter, removed from the upper lip immediately beneath the mucous membrane. It is firm, but contains a good deal of mucin. Its section is opalescent with an admixture of some yellow opaque substance. It contains yellow elastic and white fibrous tissue in small quantity, and in the stroma are oval nuclei, large granulation-cells, and in some parts small tubes which are full of oval nuclei.

From a lady, aged 50. It had been growing steadily for about 12 years. For drawings see MS. Notes, vol. ii. p. 124. Path. Soc. Trans. vol. xxviii.

Presented by Sir William Fergusson, 1871.

2262. A sessile papillary growth, which projected horizontally forwards from the margin of the lower lip. Its free border, directed downwards in the specimen, is hard, horny, and unequally divided by an indentation.

It commenced five years before removal as "a small white blister." It so remained for two years, but then began steadily to grow. The submaxillary glands were not enlarged. (See MS. Notes, vol. iii. p. 169.)

Presented by Thomas D. Ransford, Esq., 1881.

2263. A portion of the cheek, including the left angle of the mouth, the mucous surface of which is the seat of an epitheliomatous ulcer. Its edge is indurated and everted, and the surface is very irregular from the presence of large rounded firm-looking granulations.

From a man of middle age.

Presented by Edward Cock, Esq., 1867.

2264. Part of an upper lip and of the cheek, on which there is a large circular, elevated, warty epithelioma of the skin; it does not implicate the margin of the lip, and its surface is slightly ulcerated.

The disease had existed for two years; the patient recovered from its removal.

From the Museum of George Langstaff, Esq.

2264 A. A portion of a lower lip with an epitheliomatous ulcer, having everted and undermined edges and an indurated base. 1883.

2265. A head and face with a rodent ulcer which has destroyed the greater portion of the integuments and bones of the face. The ulceration extends upwards to the scalp and backwards to within half an inch of the tragus; on the right side its margin slopes downwards to the angle of the mouth, but on the left the integuments covering the alveolar portion of the lower jaw are destroyed. The lower lip is intact, being the only portion of the oral orifice remaining. The lower and lateral margins of the ulcer are thickened and undermined, while the upper are gradually shelved. The frontal bone is penetrated by rounded patches of superficial ulceration with irregularly eroded bases. Both eyes, the nasal, ethmoid, and the left superior maxillary bones are completely destroyed; the right superior maxilla remains, although its orbital plate has disappeared. The orbital, nasal, and oral cavities are thus thrown into one cavity, with irregularly ulcerated walls, at the bottom of which the tongue, and behind the naso-pharynx, are exposed to view.

Sections of the undermined margins of the ulcer, examined in 1883, showed that the corium and subcutaneous tissue were infiltrated by a new growth of epithelium, consisting of irregularly scattered and anastomosing columns and masses of very small epithelial cells, but chiefly of nuclei of epithelial cells. A few cell-masses contained rounded groups or whorls of cells, which were not cornified. The epithelial covering of the skin at the margin was unaffected, the infiltration having extended gradually beneath it.

From an insane woman, aged 52. The disease began ten years before death as a "tubercle" on the forehead; this became the seat of ulceration, which extended to the inner canthus. The sight of the left eye was lost in 1874, and in 1875 the right eye and the nasal bones were destroyed. Death took place in November 1879.

Presented by William Orange, Esq., M.D., 1880.

Specimens of Injuries and Diseases of the Lips and Cheeks in other parts of the Museum are:—Nos. 75, 402 A, 436, 471, 472, and 472 A.

Series XVIII. INJURIES AND DISEASES OF THE TONGUE.

Bites : 2266.

Wounded Vessels : 2266.

Syphilitic Ulceration : 3494, 3496.

Morbid Growths : 2267 to 2274.

Fatty : 2267, 2267 A.

Fibrous : 2268, 2269.

Sarcoma : 2269 A?, 2270.

Papillary : 2271, 404 A.

Glandular : 2271.

Epithelioma : 2272 to 2274.

Congenital : 2268, 2269 A, 2271.

2266. Part of a tongue with some adjacent organs. The extremity of the organ was bitten off, and the surface of the wound is bordered with a thin white slough. Bristles are passed through the ranine arteries, both of which were divided by the teeth.

The patient was an epileptic idiot, sixteen years old. A short time before his death, in a severe fit, he bit-off the end of his tongue. Profuse hæmorrhage ensued, and continued for two days, for it was impossible to open his mouth so as to tie the divided arteries. After this there was a fœtid discharge from the mouth, and some sloughs separated; the patient grew very weak, and died insensible.

From the Museum of George Langstaff, Esq.

2267. A small lobulated fatty tumour, removed from a tongue in which it was imbedded.

From the Museum of Sir A. P. Cooper.

2267 A. A small, lobulated fatty tumour, a quarter of an inch in

its long diameter, which was removed from the submucous tissue of the right edge of the tongue.

From a man, aged about 60. He had only noticed the swelling for a short time ; it had the appearance of a small bulla. Microscopically it consisted of fat.

Presented by Christopher Heath, Esq., 1883.

2268. Two congenital tumours removed from the tongue. They are flattened in shape, and have a tough wrinkled covering of cuticular appearance. The larger is fibrocellular, being composed of a network of traversing fibres, in the meshes of which was a gelatinous fluid of yellowish colour.

From a woman aged 27. The tumours were noticed at her birth ; they were then very large and are described as having increased but little in size. They contained no muscular tissue.

Presented by Francis Mason, Esq., 1863.

2269. A tongue, with the fauces, larynx, pharynx, and other adjacent organs. In the left side of the base of the tongue there is a round fibrous tumour, composed of firm and obscurely fibrous substance. The mucous membrane is continued over the surface of this growth, and its base cannot be distinguished from the deeper tissues of the tongue. The mucous membrane of the left half of the palate, and that covering the epiglottis and the upper and back part of the larynx, are thick and œdematous : the superior opening into the larynx is reduced, by the swelling of the mucous membrane, to a narrow chink.

Microscopically examined in 1883, the tumour consisted of fasciculi of wavy fibrous tissue. In many parts of it were groups and masses of small round lymphoid cells, and these were thickly aggregated beneath the epithelium, which was not materially altered. No muscle was visible.

Hunterian.

- 2269 A. The halves of a tongue through which a median vertical section has been made. Occupying its dorsum near the base is a papillary growth, of which the papillæ are large,

flat, and foliaceous. The tongue is much enlarged by a whitish growth of fibrous appearance, which infiltrates its substance deeply and widely. The fungiform papillæ are generally enlarged, and at the edge of the growth upon the surface a transition by gradual enlargement of the normal papillæ to the papillary growths may be observed both with the naked eye and with the microscope. In certain parts of the growth the vessels were so abundant as to give it the appearance of a nævoid structure.

The papillæ consist in great part of fibrous tissue, and are covered by a layer of elongated epithelial cells. The connective tissue of the larger papillæ contains alveolar spaces filled with round cells of the connective-tissue type, which, near the margin of the tumour, appear to be undergoing development into connective tissue; the growth within the tongue likewise consists of round, elongated or irregular spaces filled with similar cells.

The tongue was removed from a young gentleman who had from his earliest years an enlargement of the tongue, which very slowly increased, until its large size necessitated surgical treatment. No return of the disease had taken place within a year of the operation.

Presented by Jonathan Hutchinson, Esq., 1882.

2270. A small, firm, flat tumour, removed from a tongue. It is of a pale colour and uniform consistence, like the fibro-cellular tumours of the mammary gland.

Microscopically examined in 1883, the greater portion of the tumour consisted of loose fibrillar tissue with numerous small branched and oval cells; other parts were denser and were made-up of small round and spindle-cells (Mixed Sarcoma).

Presented by Sir Everard Home.

2271. The tongue and larynx of an infant. Upon the dorsum of the tongue is a congenital tumour with a warty surface extending from about the line of the circumvallate papillæ backwards to the epiglottis. It occupies about half the breadth in the median line, and extends deeply into the substance of the tongue, being clearly distinguishable from the healthy structures by its paler colour and softer more spongy texture. It is composed of glandular follicles, ducts and vessels, with an intervening matrix of connective tissue.

Some of the papillæ on the surface also are hypertrophied. The tumour is the result of hypertrophy of the racemose glands normally existing on the surface of that part of the tongue upon which the tumour is situated.

From a female child. The tumour caused death by suffocation sixteen hours after birth (Trans. Path. Soc. vol. xx. p. 160).

Presented by Dr. Hickman, 1869.

2272. A section of the base of the tongue of an Ox, on the surface of which is a large and vascular wart-like growth. In its interior the growth appears fibrous; on its surface, which is deeply lobed, it is covered by a softer substance.

There were growths of the same kind in the lungs and liver.

From the Museum of George Langstaff, Esq.

2273. A tongue with a fissure or slit-like depression about an inch long, situated on the dorsum near the middle of the right half and running parallel to the raphé. The tongue around it is indurated, and the epithelium, elsewhere much wrinkled, is here nearly smooth. In the section the epithelium near the fissure is much thickened, and, at one part, extends downwards the entire depth of the section.

The microscope showed an ingrowth of epithelium in the form of columns containing "cell-nests" (Epithelioma).

From a man aged 40, whose tongue had been subject for two or three years to "breakings out," which healed entirely on the application of caustics. There never was any distinct ulceration. No history of syphilis could be obtained, but he had gyrate palmar psoriasis.

Presented by Jonathan Hutchinson, Esq., 1882.

- 2273 A. One half of a tongue, with an epitheliomatous ulcer, having an indurated base and undermined edges, at the middle of its lateral border.

Presented by Henry T. Butlin, Esq., 1881.

2274. A tongue, with the larynx and adjacent parts. An irregular ulcer, with hard, sinuous, and nodulated margins, has

destroyed the apex of the tongue, and extended through its length to its base, where there is a wide aperture just in front of the epiglottis. On the anterior and upper part of the tongue, behind the ulcerated part of the apex, many of the papillæ are elongated and form slender processes one eighth of an inch in length.

From a man 50 years old, in whom the disease had existed several months: it commenced at the apex of the tongue, and slowly extended backwards.

From the Museum of Robert Liston, Esq.

Specimens of Injuries and Diseases of the Tongue in other parts of the Museum are:—Nos. 252, 404 A, 2280, 2298, 3491, and 3494.

Series XIX. INJURIES AND DISEASES OF THE PALATE, TONSILS, AND FAUCES.

Hypertrophy: 2275 to 2278, 2282.

Œdema: 2269.

Syphilitic Ulceration: 2279, 2280.

Cicatrices: 2280.

Morbid growths: 2281, 2283 A, 2285.

Papilloma: 2281, 2282.

Lympho-Sarcoma: 2283 to 2284.

Cancer: 2284A, 2285.

Hypertrophy.

2275. A tongue, with the soft palate, fauces, and other adjacent organs. Both the tonsils are enlarged. *Hunterian.*

2276. Parts of a palate and a tongue, with the uvula an inch long. *From the Museum of Sir A. P. Cooper.*

2277. Part of an enlarged tonsil. Numerous thick and indurated trabeculæ, with enlarged follicles intervening, intersect its substance. *Presented by John Hilton, Esq.*

2278. Parts of a pair of enlarged tonsils, similar but less changed in structure.

From a boy aged 15 years.

Presented by Sir William Fergusson, 1869.

Syphilitic Ulceration.

2279. A tongue, with the soft palate, larynx, and other adjacent organs. There is an aperture about six lines in diameter

through the right half of the soft palate, the result of syphilitic ulceration several years before death. Its margins are completely cicatrized.

From the Museum of George Langstaff, Esq.

2280. A tongue, with the soft palate, larynx, and pharynx. On the posterior part of the dorsum of the tongue is an irregular depression, produced by a partially cicatrized ulcer. The uvula is destroyed, and the posterior margin of the soft palate is cicatrized and contracted. The upper half of the epiglottis is removed, and the margin of the remaining part thickened and uneven. Immediately above the epiglottis is a deep circular ulcer on each side of the root of the tongue. The upper part of the œsophagus is contracted.

From a young woman who had long suffered with syphilis.

From the Museum of Robert Liston, Esq.

Morbid Growths.

2281. A large warty growth, which occupied the region of the left tonsil. Its surface is covered by small rounded lobulated masses of firm consistence, but towards the upper part are thickened fibrous bands like the trabeculæ of a hypertrophied tonsil.

From a boy aged 13 years. It had been present from his infancy.

Presented by Sir William Fergusson, 1865.

2282. An enlarged tonsil, to which is attached a small pedunculated warty growth composed of a bundle of filiform papillæ.

From a boy aged 9 years.

Presented by Francis Mason, Esq.

2283. A vertical section of the head and neck of a man, with a large soft flocculent tumour in the region of the right tonsil. It occupies the greater part of the pharynx, pushing aside the epiglottis and partially closing the larynx. Part of the

tonsil, unchanged in structure, is still present at the upper part. The tumour has grown widely amongst the muscles of the neck behind the jaw. It is composed of small round lymphoid cells.

From a youth of 18, who was admitted to the Nottingham Hospital under Mr. Littlewood in October 1872, three weeks before his death. The tumour was then tolerably firm though elastic, and is said to have sprung from the right tonsil. He had slight dysphagia, deafness of the right ear, dyspnoea, and frequent hæmorrhage from the fauces. The growth had been noticed six weeks, and continued to grow rapidly till his death, the hæmorrhage increasing day by day. Death occurred from exhaustion nine weeks after the apparent commencement of the disease.

The case is recorded in the 'Transactions of the Pathological Society,' vol. xxiv. p. 90.

Presented by Lewis Marshall, Esq., M.D., 1872.

- 2283 A. The mouth, fauces, and the right side of a lower jaw, dissected to display a sarcoma of the right tonsil, which projects into the fauces, almost completely closing the opening into the nares and slightly depressing the epiglottis. The tumour also extends forwards beneath the tongue to the symphysis, and downwards below the angle of the jaw, which it overlaps; it almost surrounds the jaw at this part by nearly meeting with another mass, which projects outwards in front of the ascending ramus.

From a woman aged 74. The chief symptoms were pain and difficulty in deglutition, which was restricted to small quantities of fluid. Respiration was unaffected. She died with exhaustion five and a half months from the commencement of the symptoms.

The lymphatic glands on the right side of the neck were infiltrated with the morbid growth, and there were secondary tumours in the wall of the right auricle, spleen, and within the abdominal cavity.

All the growths consisted, microscopically, of small round cells such as are found in lympho-sarcoma. (See Trans. Path. Soc. vol. xxxiii. p. 331, 1882.)

Presented by Samuel West, Esq., M.D., 1882.

2284. The tongue, larynx, and part of the pharynx, with a lympho-sarcoma protruding into the fauces from the right side of the pharynx in the situation of the tonsil. It has no well-defined limits, but extends upwards and downwards in the

lymphatic glands of the neck and inwards nearly to the median line. It is very soft, and was growing rapidly.

From a married woman, 53 years old, who had been an inmate of the Chelmsford Infirmary for six months before her death. She had pain in the region of the right tonsil and dysphagia. The tonsil was enlarged, hard, and painful, secreting a thin serous fluid. She became emaciated and sank exhausted, the pain and dysphagia being on the increase. No disease of the viscera was found at the post-mortem examination.

Presented by James Nicholls, Esq., M.D., 1873.

- 2284 A. One half of a tumour, about one inch and three quarters in diameter, which was attached to the posterior and upper part of the right half of the soft palate. Its section is dense, uniform, and has a fibrous appearance.

Microscopically it was made up of alveoli of fibrous tissue filled with epithelial-like cells.

From a man, aged 38, who had observed it for six years before its removal. (See MS. Note-book, vol. i. p. 437.)

Presented by Thomas Bryant, Esq., 1872.

2285. A portion of the superior and posterior part of the pharynx, with the left tonsil and the left common external and internal carotid artery. The mucous membrane of the pharynx shows a circular ulcer with everted edges, and the cut surface displays a portion of the superior constrictor muscle lost inferiorly in morbid deposit which thickens the walls of the pharynx and is broken down at one point. The tonsil is deeply imbedded in the growth.

From a woman aged 55. She had enjoyed good health till three months before her death, when she became languid and thin. A month later her throat became sore and she suffered from dysphagia. (See MS. Note-book, vol. iii. p. 122.)

Presented by Henry A. Lediard, Esq., M.D., 1879.

Specimens of Diseases of the Palate, Tonsil, and Fauces in other parts of the Museum are:—Nos. 3474, 3488, 3492, 3495, 3496.

Series XX. DISEASES OF PHARYNX AND ŒSOPHAGUS.

- Foreign Bodies : 2286 to 2288.
 Hypertrophy, Epithelial : 2289, 2290.
 " Muscular : 2299, 2300, 2301, 2304.
 Dilatation : 2299, 2300, 2301.
 Pouches : 2291, 2317.
 Inflammation : 2292, 2397 ?
 Abscess (Post-pharyngeal) : 2293.
 Ulceration : 2296, 2300.
 from foreign body : 2288.
 " into Aorta : 2288.
 " into Trachea : 2305, 2312, 2314.
 " into Lung : 2308.
 Fistulæ : 2302.
 Simple Stricture : 2294 to 2300.
 Congenital ? : 2294, 2295.
 Cicatricial : 2297 to 2299.
 Morbid Growths : 2301 ? to 2325.
 Cancerous Stricture : 2301 to 2306.
 " Ulcers : 2301, 2303 to 2315.
 Epithelioma and Medullary Cancer : 2316 to 2320.
 Colloid Cancer : 2321 ?, 2322 ?
 Polypi : 2324, 2325.
 Obstruction from external morbid growths : 2323.

Impaction of Foreign Bodies.

2286. Two plates used for fixing artificial teeth. Each was swallowed accidentally by its wearer and impacted in the lower part of the pharynx. In each case œsophagotomy was performed and the plate removed with a successful result.

The cases are fully reported in the 'Guy's Hospital Reports,' Series iii. vol. iv. p. 217, and vol. xiii. p. 1.

Presented by Edward Cock, Esq., 1868.

2287. "On Thursday the 1st of May, 1798, Doctr. R. Willis did me the favour to call on me to desire me to see a gentleman,

a patient of his, who was insane, who, on the Saturday night before, at twelve o'clock, had rammed down his throat this handle of a punch-ladle (ten inches and a half long), with an intent to destroy himself.

"I went to him at two o'clock, and extracted it after it had been in his throat sixty-two hours without producing any ill, he having eat, drunk, and slept as usual during the whole time, and was next day free from complaint."—*MS. note accompanying the preparation.*

From the Museum of John Heaviside, Esq.

2288. Portions of œsophagus, aorta, and trachea, with an ulcerated aperture between the aorta and œsophagus, from which fatal hæmorrhage occurred. It was occasioned by the presence of a false half-crown (preserved with the specimen) which was swallowed more than nine months before death and remained lodged in the œsophagus.

The patient was a "smasher," or passer of base coin, who died in the Pentonville Prison Sept. 24, 1868. He appeared in good health on his reception, and up to the day of his death worked at trade, that of a shoemaker, and ate the food allowed him. Occasionally during his imprisonment he complained of vague pain in the chest and slight dyspeptic symptoms, and latterly of a slight cough without expectoration. Eight months after his admission he first stated that he had swallowed a bad half-crown some time before his conviction, and to this he attributed his ailment. In the absence of any severe pain, spasm, or dysphagia, it was concluded that it had not lodged in the œsophagus. He was seized with severe hæmatemesis nine months after his admission, and died. The stomach and intestines, except the descending colon and rectum, were full of coagulated blood. The coin, of white uncorroded metal, lay near, but not in the seat of the ulcer. It had, apparently, remained with its face to the surface of the œsophagus without materially obstructing its calibre, and was held in position by a shallow pouch.

Presented by C. Lawrence Bradley, Esq., 1869.

Hypertrophy of Œsophageal Epithelium?

2289. The œsophagus of a man who died with symptoms of hydrophobia. The epithelium appears rather thicker than is usual; a portion of it is removed to show the smoothness of the subjacent mucous membrane. *Hunterian.*

2290. The lower part of the œsophagus, with part of the stomach, of a man who died with symptoms of hydrophobia from a bite. The epithelium of the œsophagus appears in this, as in the preceding preparation, thicker than is usual, but presents no peculiar structural alteration. *Hunterian.*

Probably both these preparations were made to show that there is no morbid change of structure in the œsophagus in hydrophobia; a fact which Mr. Hunter recorded in the following case:—

“Hydrophobia.

“ ——— Robertson was bit by a young dog, in the lip, on Wednesday the 18th of December, 1776. On Sunday the 19th of January, 1777, when from home, was taken with a sickness in his stomach, and a disagreeable sensation in his throat. The uneasiness in his throat increased, and a considerable difficulty in swallowing fluids. This was more than simple difficulty or pain in swallowing; it produced an universal irritation, which flew up to his head, and made him almost mad at the time, and he felt the sensation of his mouth and throat being on fire. He could swallow any solid much better than fluids. He could not, or rather durst not, swallow his own spittle. They gave him some orange, which, melting into a fluid in his mouth, gave him as much pain as water. They gave him sugar-candy, and it also, by melting in the saliva, gave equal pain in swallowing.

“ His mind was in a state of great irritability, as also his body, universally. When he saw anything which had given him those sensations in swallowing, it almost produced immediate madness. He accidentally looked out of the window and saw water; he immediately started back, and so quick as to fall. If a door or window was opened, and fresh cold air came in, he immediately felt it, and begged they might be shut, the sensation was disagreeable: he disliked the blankets being raised, as the cold air was allowed to come in. Warmth appeared agreeable; he could hardly bear the light, at least it was disagreeable, as also noise. He complained at times of a tightness across the breast.

“ He flew into passions, and more readily if any one desired him to drink. He became very suspicious of every one round him. At times, when nothing externally disturbed him, he was pretty calm, and talked reasonably, knew his situation, but flew into a passion immediately upon the slightest occasions. Was very quick in his answers; talked freely and articulately, appearing to have no difficulty in that action similar to a sore throat.

“ All the above symptoms kept increasing from Sunday until the Thursday following, when he became at times outrageous, both from the increase of the disease, and being teased with people calling, staring, and importuning him to drink. At last an attempt was made to secure him, but they failed, and two men

got bit in the hand; however, at about seven o'clock in the evening he was seized, and carried to the Infirmary at Marylebone, and strapped down to the bed, and begged to be left alone, as he wished to be quiet. He then complained much of the tightness across his breast from the straps. About nine, some people went to see him, and he spoke to them; about seven on the Friday morning he was found dead.

"On the same day about one o'clock I opened his fauces, throat, and œsophagus, and found nothing remarkable or præternatural. The salivary glands [and] the muscles of these parts were perfectly sound, nor was there anything remarkable in the part that had been bitten.

"From all the symptoms, and from nothing appearing diseased after death, this disease would seem entirely nervous.

"It is similar in many effects to *nux vomica* on a dog."—*Hunterian MS. Cases in Surgery*, p. 316.

Pharyngeal Pouch.

2291. A pharynx and œsophagus, with the larynx and trachea. At the lower and posterior part of the pharynx there is an oval pouch, possibly of congenital origin, about two inches long, and an inch in diameter, formed by a hernia-like dilatation of the mucous membrane. The pouch opens with a wide orifice into the cavity of the pharynx, and is lined with a continuation of the mucous membrane, but the muscular coat is not continued over it. All the adjacent tissues are healthy. The larynx and epiglottis are very large.

The patient was a bishop, 90 years old. The pouch at last used to receive the greater part of the food, and when it was filled the patient was in the habit of pressing up the side of the neck, so as to empty the pouch into the œsophagus. He had also long suffered from a fistulous opening into the gall-bladder, through which two gall-stones had been discharged externally.

Presented by William Guy, Esq.

Inflammation of the Œsophagus.

2292. A larynx, pharynx, and œsophagus showing the effect of acute inflammation of the mucous membrane of the œsophagus, probably diphtheritic. The surface is discoloured by the extravasation of blood. The mucous membrane is

everywhere thickened, thrown into abnormally thick longitudinal folds, and flocculent from the presence of superimposed lymph.

Presented by Dr. Goodhart, 1875.

Post-Pharyngeal Abscess.

2293. The larynx and tongue of a child with the adjacent structures showing a loculated cavity behind the pharynx, which formed the sac of a post-pharyngeal abscess. One of the secondary pouches protrudes in the median line posteriorly on a level with the rima glottidis, and the separation between the abscess and the pharynx is very thin.

Presented by Dr. Peacock, 1877.

Simple Strictures of the Œsophagus.

2294. Part of a pharynx, with the larynx. Opposite the lower margin of the cricoid cartilage there is a projecting annular fold of the mucous membrane, about a line in depth, narrowing the passage into the Œsophagus. The adjacent parts appear healthy, and the fold is composed of healthy mucous membrane ; the canal around the fold is slightly constricted.

Hunterian.

2295. Parts of the pharynx and Œsophagus, with the larynx and trachea, of a child. At the level of the lower margin of the cricoid cartilage, the commencement of the Œsophagus is reduced to less than half its natural diameter by a sudden contraction of its walls. The tissues at and around the stricture are not visibly altered, and the canal above and below it is healthy.

This and the preceding preparation present examples of the disease to which Sir Everard Home applied particularly the name of stricture in the Œsophagus, and in which he believed that the use of caustic bougies was chiefly beneficial. See his ‘Practical Observations on the Treatment of Strictures in the Urethra and Œsophagus,’ vol. ii. p. 395, &c. (London, 1803) ; and the next following specimen.

Presented by Sir Everard Home.

2296. A pharynx, with the upper portion of the œsophagus, the soft palate, and other adjacent parts, in which it was supposed that a stricture, like that last described, was nearly cured by the use of caustic bougies. No trace of stricture can now be seen; but opposite the lower border of the cricoid cartilage, and for some distance above it, there is an extensive superficial shreddy ulcer, a part of which is blackened with nitrate of silver. There is a similar ulcer on the upper surface of the soft palate; and all the adjacent tissues, including the mucous membrane over the upper and back part of the larynx, are very thick and œdematous.

From a lady of very nervous temperament, 46 years old, who had "a narrow swallow" from childhood, and in whom the difficulty of swallowing had been so great during the last two years of her life that she took only liquids. She was subject also to attacks of a sense of suffocation and of loss of voice. Caustic was applied many times to the supposed seat of obstruction, and with apparent relief. But during its use she was frequently attacked with the sense of suffocation, and on one of these occasions died.

The case is related, and the preparation is engraved, in the 'Practical Observations on Strictures,' by Everard Home, Esq., vol. ii. p. 414 (London, 1803).

Presented by Sir Everard Home.

2297. A pharynx and œsophagus, with the adjacent organs. Just below the cricoid cartilage the canal of the œsophagus gradually contracts to half its natural diameter, and then gradually dilates again. The mucous membrane at the contracted part forms transverse sharp-edged and projecting folds, which extend round the whole, or the chief part, of the circumference of the canal; it also seems condensed, as if by cicatrization.

Hunterian.

2298. A pharynx and œsophagus, with the tongue and adjacent parts, from a boy ten years old. At the level of the cricoid cartilage, and through an extent of about an inch below it, the walls of the œsophagus are thickened, and its canal is reduced to hardly more than a line in diameter. The

greater part of the tongue has lost its papillary structure, and is covered with a thin, wrinkled, and polished cuticle, like that of a superficial cicatrix.

These changes were consequent on swallowing some sulphuric acid. The stricture was treated with bougies.

From the Museum of Robert Liston, Esq.

2299. A pharynx and œsophagus, with the adjacent organs. Below the cricoid cartilage the canal of the œsophagus is contracted to one-third of its usual diameter. The stricture is continued for about half an inch, and is abruptly terminated by a projecting transverse fold, below which the canal is uniformly dilated to much more than its usual size. At the stricture the mucous membrane appears somewhat condensed, and its surface is smooth and shining: above the stricture the walls of the canal are thickened by an increase of their muscular tissue; below it, in the dilated part, they are very thin, and their inner surface is creased and irregularly wrinkled. *Hunterian.*

2300. A pharynx and œsophagus, in which the canal of the latter, through about an inch of its length, is reduced, by thickening and contraction of its walls, to one sixth of an inch in diameter. Above the stricture the œsophagus is dilated, its walls are thick and muscular, and a small portion of its mucous membrane is dark and ulcerated: below the stricture it is reduced to half its usual size, and its walls are very thin and flaccid. The mucous membrane at the back of the larynx is loose and wrinkled, as if it had been œdematous.

From a woman 45 years old, in whom the disease had long existed. It was treated with caustic, which probably produced the ulceration and œdema above the stricture. She died of inanition.

From the Museum of Robert Liston, Esq.

Cancerous Stricture of the Pharynx and Œsophagus.

2301. The lower half of an œsophagus, of which the canal im-

mediately above the cardia is reduced to one eighth of an inch in diameter. The walls are at this part thickened and condensed, and the mucous membrane is superficially ulcerated. Above the stricture the œsophagus is considerably dilated, its muscular coat is hypertrophied, and there are several superficial circular and oval ulcers of its mucous membrane.

The patient was a man upwards of 60 years old, in whom the characteristic signs of this disease commenced about four months after a dislocation of the second from the first portion of his sternum, and one month before his death. During the last month he was much emaciated, and vomited every thing that he swallowed. When he drank small quantities of milk they remained for several hours, and were then thrown up, coagulated. His medicines, after being retained for the same time, were returned but little altered.

After death the stomach was found contracted, and its coats were very thin. Its mucous membrane, as well as that of the whole intestinal canal, was highly vascular. Above the stricture, the œsophagus contained a large quantity of coagulated milk. The dislocated sternum is preserved in Series XIII. No. 1733, described in vol. ii. p. 392.

Presented by Joseph Swan, Esq.

- 2302.** Parts of a pharynx and œsophagus, of which the canal just below the level of the cricoid cartilage is reduced to a diameter of a quarter of an inch, by thickening and contraction of the mucous membrane and the tissue beneath it. The thickening extends upwards to the level of the hyoid bone, and downwards in a less degree along the rest of the œsophagus. The interior of the canal, at the most contracted part, is ulcerated, rough, and flocculent: in two points, marked by portions of quill and whalebone, the ulceration has penetrated the walls of the canal, and has passed round to the front of the trachea, forming narrow sinuous passages like fistulæ.

This preparation is represented in Baillie's 'Morbidity Anatomy,' fasc. iii. pl. iii. fig. 2.

Hunterian.

- 2303.** Parts of a pharynx and œsophagus, with the adjacent organs. Just below the cricoid cartilage the canal of the

œsophagus, through a length of about two inches, is reduced, by thickening of its walls, to two thirds of its natural calibre. At the lower part of the stricture there is a large irregular ulcer, extending deeply into the mucous membrane of the anterior wall of the œsophagus and the adjacent indurated tissues. Near the lower margin of this ulcer there are, also, three smaller ulcers leading, through apparently healthy mucous membrane, to cavities of wider extent, like the cavities of small abscesses in the submucous tissue.

Presented by Sir Everard Home.

2304. The upper part of an œsophagus with the adjacent portion of the trachea, showing constriction, thickening, and ulceration of the œsophagus from the presence of a cancer. The muscular coat below the disease appears thickened.

Presented by John Hilton, Esq., 1866.

2305. A portion of an œsophagus with the corresponding part of the trachea just above its bifurcation. The lining membrane of the œsophagus for two inches of its length is extensively ulcerated and adherent to the trachea, this part of the œsophagus being dilated. A free communication exists between the two tubes by a ragged ulcerated opening. The ulcer presents the appearances of cancer.

From a man aged 52.

Presented by W. L. Crowther, Esq., 1866.

2306. Portion of the œsophagus and cardiac end of the stomach, with a narrow cancerous stricture at their junction. The coats of the œsophagus are thickened, white, and infiltrated: its surface is irregularly ulcerated.

From a man aged 30, engaged in chemical and chiefly mercurial works. He had always enjoyed good health till eight weeks before his death, when he first noticed a difficulty in swallowing solids. Death occurred from gradual exhaustion. The glands in the mediastinum were affected, but no secondary growth was found. The stomach was congested and very contracted.

Presented by Dr. Goodhart, 1875.

2307. Parts of a pharynx and œsophagus, with the larynx, tonsils, and other adjacent organs. The lower part of the walls of the pharynx is occupied by a large ragged ulcer, with an overhanging sinuous margin, which has in some parts penetrated very deeply. Below it the canal of the upper part of the œsophagus is reduced, by the thickening of its walls, to half its natural calibre. The space between the epiglottis and the arytaenoid cartilages is much diminished by the right arytaeno-epiglottic fold of membrane being pressed inwards by the thickened tissues in its vicinity.

From the Museum of John Heaviside, Esq.

2308. A portion of an œsophagus, of which all the mucous membrane, through a length of about three inches, is destroyed by an ulcer of irregularly oval form, with slightly elevated sinuous margins, and a base which has a reticular aspect, and is intersected by prominent, coarse, fibrous bands. The middle of the ulcer is deeper than any other part of it, and here it has at one situation penetrated through the front of the œsophagus, making an oval aperture, to the margins of which a portion of the left lung is adherent. Beyond this aperture, also, the ulceration has extended for a short distance into the substance of the lung itself.

Hunterian.

2309. An œsophagus, with the lower part of the trachea. The walls of the former, through a length of about four inches, are deeply ulcerated. The ulcer has the same general characters as that last described, but its surface is softer, and is nearly covered with coarse flocculent shreds. It has penetrated through the front of the œsophagus, making in it an aperture an inch in diameter, to the margins of which the connective tissue of the posterior mediastinum is closely adherent.

Hunterian.

2310. A pharynx, with the larynx and other adjacent parts. Through a length of about two inches below the arytaenoid cartilages, the walls of the pharynx and of the upper part

of the Œsophagus are deeply and irregularly ulcerated, apparently after the degeneration of a cancer. On the left side the ulcer has exposed part of the cricoid cartilage and the inferior horn of the thyroid cartilage, and has extended into the substance of the thyroid body.

Presented by Sir William Blizard.

2311. An Œsophagus, with parts of the trachea, aorta, pulmonary artery, and right lung, all unnaturally adherent. An ulcer of cancerous appearance, commencing at the level of the bifurcation of the trachea, and extending about four inches downwards, has destroyed the left, and a part of the posterior, wall of the Œsophagus. The remaining portions of the wall are rough, but not flocculent, and all the rest of the canal is dilated and slightly thickened. There is a soft deposit of atheromatous matter in the walls of the aorta.

Hunterian.

2312. Parts of a pharynx and Œsophagus, with the larynx and trachea. All the mucous membrane of the pharynx below the level of the arytaenoid cartilages, as well as that of the upper part of the Œsophagus, is destroyed by an irregular deeply spreading ulcer, with a hard uneven base. At its lower part the ulcer has made several large round apertures through all the membranes of the canal, and just below the cricoid cartilage has penetrated into the trachea.

Presented by Sir Everard Home.

2313. Parts of a pharynx and Œsophagus, with the larynx and trachea. On each of the lateral walls of the middle and lower parts of the pharynx there is a similar deep ulcer more than an inch in length. Just below the level of the thyroid body the anterior wall of the Œsophagus, through a length of about two inches, is completely destroyed by an ulcer, similar to that last described, which has also spread round the left side of the adjacent part of the trachea, and by removing its mucous membrane and the tissue external to it has completely exposed parts of four of the cartilaginous rings.

Presented by Sir William Blizard.

2314. A pharynx and œsophagus, with the larynx and trachea. The walls of the upper part of the œsophagus are completely destroyed by an ulcer, which has a granulated base and an abrupt sinuous margin. At its centre the ulcer has extended into the trachea, through the posterior wall of which it has made an oval aperture with everted edges, and measuring about three quarters of an inch in its longest diameter. The mucous membrane around the borders of the ulcer appears healthy.

From the Museum of Robert Liston, Esq.

2315. A portion of the pharynx and œsophagus, with the corresponding parts of the larynx and trachea. The lining-membrane of the œsophagus immediately below the level of the cricoid cartilage is deeply ulcerated for a space of rather more than an inch in length and extending round the circumference of the tube. The ulcer attains its greatest depth at the centre of its anterior part, where it has perforated all the coats of the œsophagus, which appears, at this spot, to be closely adherent to the trachea. The ulcer shows some thickening at its base, and is probably cancerous.

Presented by R. R. Robinson, Esq.

2316. Portions of a pharynx and œsophagus, with the larynx and trachea. On the mucous membrane of the lower part of the pharynx there are several growths of a moderately firm and probably medullary substance, with lobulated and wart-like surfaces. The largest of them is about an inch and a half in length and an inch in thickness : it is situated in the middle of the anterior wall of the pharynx, and projects so far upwards and forwards that it nearly touches the epiglottis, and closes the aperture into the larynx. Its surface is unevenly lobular, but smooth, like that of mucous membrane. Above it, on the right wall of the pharynx, is a small wart-like growth, composed of short papillary bodies ; and on the left wall is a smooth, flat, circular growth, attached by a narrow base, and hanging, like a polypus, into

the cavity. Below the largest growth the mucous membrane of the pharynx is ulcerated.

The tumour was several years in progress, and the patient died of inanition.

Presented by W. E. Jefferys, Esq.

2317. A pharynx and œsophagus, with the larynx, tongue, and other adjacent parts, from a female sixty years old. The walls of the pharynx are almost entirely occupied by large, flat, lobulated tumours, composed of a firm medullary substance, with surfaces partially ulcerated and shreddy; they nearly fill the cavity of the pharynx, and, by pressing forward the arytaenoid cartilages, have obstructed the passage into the larynx. At the upper part of the œsophagus is a round mass of the same substance, about an inch in diameter, the greater part of which is lodged within a saccular dilatation of the walls of the canal.

From the Museum of Robert Liston, Esq.

2318. A pharynx, with a part of the œsophagus, the larynx, and other adjacent organs. The walls of the pharynx and œsophagus, from the back of the arytaenoid cartilages to the bifurcation of the trachea, are nearly covered with growths like those last described, but partly destroyed by coarse irregular ulceration, so that a great part of their inner surface is ragged. Below the trachea there are several small, white, circular elevations of the mucous membrane of the œsophagus, with superficial ulcerations, as if tumours of the same kind had been growing beneath it.

From a woman 40 years old, who had had difficulty of swallowing for many years. During the last two months of her life this difficulty was extreme. She had also cough and offensive expectoration; and, a few days before she died, had signs of laryngeal obstruction.

The small elevations of the mucous membrane extended far down the œsophagus; there was no other cancerous disease.

Presented by Joseph Swan, Esq.

2319. A pharynx, with the larynx and other adjacent parts.

The posterior walls of the pharynx are occupied by a large,

soft, carcinomatous growth, presenting a spongy texture, and deeply grooved and fissured on its surface. The walls of the upper and posterior part of the œsophagus are increased to about half an inch in thickness by similar disease. The anterior wall of the pharynx appears to have been very œdematous. *Hunterian.*

2320. A pharynx and œsophagus, with the tongue, larynx, trachea, and other adjacent parts. A broad flat growth of a spongy substance, with an elevated sinuous margin, extends around the lower part of the pharynx and the upper part of the œsophagus. Its surface appears fibrous, and is like that of an epithelioma: it is in many places deeply cracked, as if its interior were also fibrous; in other parts it is ulcerated. On the right side the ulceration has extended deeply and penetrated through the posterior wall of the larynx, immediately below the thyroid cartilage, making an irregular aperture in it about a quarter of an inch in diameter. A portion of the thyroid cartilage, ossified and exfoliated, lies loose in this aperture. The cervical glands adjacent to the disease are enlarged. The mucous membrane covering the arytenoid cartilages is œdematous; but the rest, as well as the other textures of the œsophagus above and below the cancer, appear healthy.

From the Museum of George Langstaff, Esq.

2321. An œsophagus, of which the walls are increased to nearly half an inch in thickness by the formation of a layer of dense, greyish, semitransparent substance, intersected with white fibrous transverse bands, between the muscular and mucous coats. The canal is contracted throughout its length to a diameter of one third of an inch; the muscular walls appear healthy; the internal surface is rough, but not ulcerated. The disease, which exactly resembles the diffused cancer of the stomach shown in Nos. 506, 2408, ceases at the lower end of the œsophagus, and the cardiac portion of the stomach is healthy. *Hunterian.*

This preparation is represented in Baillie's 'Morbid Anatomy,' fasc. iii. pl. iv. fig. 2.

2322. Parts of a pharynx and Œsophagus, with the adjacent organs. The whole of the mucous membrane, through an extent of about four inches below the arytænoid cartilages, is much thickened, and its internal surface is ulcerated, soft and pulpy, perhaps from degeneration of colloid cancer. Lower down in the Œsophagus there is a circular elevated ulcer, about half an inch in diameter, with a similar soft surface. The thyroid body is enlarged. *Hunterian.*

Obstruction from External Morbid Growths.

2323. Part of an Œsophagus, of which the canal is nearly closed opposite the bifurcation of the trachea, partly by slight thickening of its walls, but chiefly by the pressure of an enlarged and indurated lymphatic gland upon its posterior and lateral walls. *Presented by Sir William Blizard.*

*Polypi and other probably innocent Tumours in the
Pharynx or Œsophagus.*

2324. A large, soft, and semitransparent mass, like a gelatinous polypus of the nose, deeply divided into numerous lobes, which was removed from behind one of the tonsils. It was attached by the narrow pedicle which is now shown at its upper part. *Presented by Sir William Blizard.*

2325. "A polypus from the fauces, removed by ligature, successfully."—(*Sir A. P. Cooper's MS.*) It is a firm mass, of irregularly spheroidal form, superficially lobed, nearly two inches in its chief diameter, and having at the upper part a narrow portion, by which, probably, it was attached. The greater part of it is covered with mucous membrane, patches of which appear superficially ulcerated.

From the Museum of Sir A. P. Cooper.

Specimens of Diseases of the Pharynx or Œsophagus in other parts of the Museum are :—Nos. 2285, 2417, 2418, 2421, 2422, 2425, and 2427.

Series XXI. INJURIES AND DISEASES OF PERITONEUM.

(*Not including Displacements.*)

Wounds &c.: 2326 to 2331 A.

Dropsy of Lesser Cavity of Peritoneum: 2352 c.

Inflammation: 2326 to 2331, 2333 to 2344.

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Inflammatory Induration: 2341 to 2344.

Vascularization of Inflammatory Products: 2334 to 2336, 2348.

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Cysts and Morbid Growths:—

Cysts: 2351 to 2352 c.

Tumours: 2353 to 2367.

Soft Cancer: 2356 to 2358.

Colloid Cancer: 2359, 2360.

Calcareous formations: 2350, 2367.

Entozoa: 2368 to 2375.

Loose bodies: 2364 to 2367.

Wounds of Peritoneum.

2326 to 2331. A series of preparations from Dogs, Rabbits, and Guinea-pigs, illustrating the results of closing wounds of the abdominal wall with or without inclusion of the peritoneum in the sutures. Some of the contents of the abdomen are adherent to the wound in those specimens of which the peritoneum was not included in the sutures; but in others, in which the peritoneum is evenly united by inclusion in the sutures, no adhesion has taken place.

Presented by Sir T. Spencer Wells, 1876.

2332. A portion of an ileum, with a laceration of its peritoneal coat, of which the edges are firmly united.

It was removed from a patient on whom ovariectomy was performed five days before death. In the course of the operation the peritoneum was lacerated in breaking-down some adhesions. The edges of the rent were brought together with silk-worm gut sutures.

Presented by Dr. G. G. Bantock, 1882.

Inflammation and its Consequences.

The following extract from the ‘Medical and Philosophical Commentaries, by a Society in Edinburgh,’ vol. iii. part 1, p. 322 (London, 1775), is appropriate to this subject, and to the next succeeding Hunterian preparations :—

“ Mr. Cruikshank, of London, in a letter to Dr. Duncan, gives the following account of Mr. John Hunter’s opinion of the puerperal fever :—

“ ‘ Mr. Hunter, in some lectures which he read at his own house last winter, among other things, treated of the inflammation of cavities. He told his pupils that he wished to impress them with horror at the thought of exposing any large cavity in the animal body. He affirms that when any such cavity is laid open, it begins soon after to inflame ; that this inflammation, for the most part, spreads over the whole cavity and terminates in suppuration, granulation, and an obliteration of the cavity. He admits that, sometimes after the whole of a cavity has inflamed, the sides may unite by what he calls the adhesive inflammation, without going on to suppuration or granulation. Of this there are instances in the case of the tunica vaginalis propria testis, when the operation for the radical cure of the hydrocele is performed. Even parts of cavities may, he thinks, unite also in this manner, at the beginning of inflammation, and prevent the inflammation from spreading over the whole cavity. By this means, in cases of the operation above alluded to, the surgeon will sometimes be disappointed in endeavouring to bring about a radical cure.

“ ‘ Mr. Hunter thinks that, when the inflammation of a cavity terminates in adhesion merely, the danger is less than when it terminates in suppuration and granulation : and if the cavity be small and of little importance, the danger may sometimes be very inconsiderable. More frequently, however, while cavities are going through the different stages of inflammation, suppuration, and granulation, the irritation thus induced on the system is great enough to destroy the patient.

“ ‘ As an example of the inflammation of an internal cavity destroying a patient in this manner, Mr. Hunter points out the inflammation of the peritoneum after labour ; a circumstance which he maintains frequently proves fatal to lying-in women. This disease has commonly been called puerperal fever. But Mr. Hunter thinks that it may more properly be denominated inflammation of the peritoneum, because he finds the peritoneum to be only, or principally affected. He affirms that the substance of the uterus, the abdominal viscera, and the muscular and villous coats of the intestines, in general, remain sound. And when the inflammation does pass to these, he thinks that it is from consent with the peritoneum, the inflammation always beginning in that part.

“ ‘ Mr. Hunter does not refuse that lying-in women may have fevers

peculiar to themselves, and that such fevers may kill. But he is convinced; from what he has seen on dissection, that the disease most frequently fatal to them is merely an inflammation; and that the febrile symptoms are like those after the amputation of a limb, owing to an injury done to a particular part, and not to any specific disease.

“ ‘This inflammation of the peritoneum is not, he thinks, peculiar to women. He has often seen it take place in men after the operation of the paracentesis for the dropsy of the abdomen. In such cases the disease had the same consequence, as well as the same cause, as in women.

“ ‘The cause he believes to be an injury done to the peritoneum as forming a cavity. By such causes its present state is either suddenly changed or it is rendered imperfect. The injury done to the peritoneum, in the case of women after delivery, he ascribes to two causes. Sometimes it proceeds from want of disposition in the womb to recover itself after labour. By this means the peritoneum, as a cavity, must necessarily be affected. At other times it proceeds from the too sudden emptying of the abdomen. By this means the peritoneum will not always recover itself so as to be properly adapted to its new state. This last cause may also hold with men after the operation of the paracentesis. But in them, besides the sudden emptying of the abdomen, there is the additional circumstance of a wound, which renders the peritoneum, as a cavity, imperfect.

“ ‘The circumstances mentioned above have, he thinks, the same effect on cavities in animal bodies as if these cavities were laid open, or as if they were stimulated internally by some extraneous matter. They must inflame; and if that inflammation cannot terminate in adhesion, they must suppurate, granulate, and endeavour to adhere in the second method.

“ ‘The inflammation of the peritoneum sometimes terminates in consequence of an adhesion taking place between the sides of the parts first inflamed. In these cases the progress of the inflammation is prevented, and the rest of the cavity is secured. But along the adhering parts there are intermediate spaces which, from want of vicinity, cannot adhere. These go on to suppurate, and the abscess leads outwards to the skin. As a proof of this, Mr. Hunter has opened abscesses in the groins of women a short time after delivery, which had begun with all the symptoms of puerperal fever. But, on opening the abscesses, these symptoms disappeared, and the patients recovered.

“ ‘When, however, an inflammation of the peritoneum occurs, it most frequently happens that it spreads over all the cavity of the abdomen. There takes place an extravasation of fluids into that cavity mixed with pus. The different viscera adhere by their peritoneal coats. The intestines are distended with air; and the irritation thus induced kills the patient long before granulations, or an obliteration of the cavity in the second method, can take place.’ ”

2333. A portion of injected small intestine, the peritoneal coat of which is more than naturally vascular and has a few slender shreds of lymph attached to it. *Hunterian.*

2334. Portion of small intestine, with its peritoneal surface covered with shreds of lymph and well-organized flocculent adhesions, the result of peritonitis. The intestine has been minutely injected, and most of the filaments are exceedingly vascular.

Presented by Francis Kiernan, Esq., 1871.

2335. A portion of peritoneum, from a case of peritonitis, dried after the minute injection of its blood-vessels. A slender piece of lymph, in which vessels are injected, is attached to the surface of the membrane. *Hunterian.*

2336. Several convolutions of small intestine united in one mass by adhesions. Their vessels are imperfectly and unequally injected. In some situations thin layers of false membrane have been reflected from the peritoneal coat ; in others there are fine loosely hanging shreds. *Hunterian.*

Probably this specimen is a portion of what Mr. Hunter thus described :—

“ *Winter, 1763*.—We dissected a young woman. On opening her belly we found almost a universal adhesion both of viscera to viscera and viscera to peritoneum. However, there were some places where adhesions could not take place, on account of some water keeping them separated.

“ The adhesion was not of long standing, as it gave way to a gentle force, and only seemed to be like half-dried glue, or much of the consistence that the coagulated lymph has when separated from the red globules and serum ; and, indeed, it seemed to be nothing else ; and the loose water in the abdomen nothing but the serum that had separated from it as it began to coagulate.

“ I injected a piece of intestine so glued together by the mesenteric vessels, and found that this covering of coagulable lymph was extremely vascular, and where the intestine had been separated from the peritoneum, to which it had adhered, that the injection came out on the surface like small red drops ; and I peeled off a part of this adventitious covering and found it extremely vascular.

“ *Query.*—How are these vessels formed ? are they elongations of the exhaling vessels forming arteries ?

“ The gall-bladder was very large and had a good many stones in it ; and there were some small stones in the ductus communis.

The inside of the intestines did not seem to have been affected by the disease on the outside.”—*Hunterian MS.: Dissections of Morbid Bodies*, No. 76, p. 105.

2337. Part of a urinary bladder, with a thick layer of lymph in the peritoneal pouch behind it. The coats of the bladder are thickened, and the inner surface of its mucous membrane is wrinkled and granular, as if it had been inflamed. *Hunterian.*

2338. A layer of partially organized lymph, about half a line in thickness, from the walls of an abdomen, eight days after the operation of tapping. Its substance is tough and compact; and attached to its inner surface are several very thin and delicate broad processes or membranous ridges of lymph which probably lay between convolutions of the intestines. *Hunterian.*

2339. Portions of liver and diaphragm, with long and delicate bands and cords of false membrane extended between their opposite peritoneal surfaces.

From the Museum of George Langstaff, Esq.

2340. A convolution of an ileum, partially laid open. At one part the opposite peritoneal surfaces of the convolution are connected by a band of false membrane, round which a bristle is tied. There are several small circular ulcers of the mucous membrane. *Hunterian.*

2341. “Part of an epiploon, having thickened without inflammation, similar to tumour.”—(*Hunterian MS. Catalogue.*) It has the appearance of an omentum indurated, folded-up, and contracted towards the lower border of the stomach in a manner often observed in cases of ascites, and is probably the specimen which Mr. Hunter has further described in the following case :—

“*Winter, 1764*.—I dissected a man who was very thin, and his belly was pretty full of water. When I opened the belly I found all the peritoneum much thickened. The mesentery was thickened

and much contracted, especially at the fixture of the guts, which threw the guts into small convolutions. The epiploon was so contracted, or puckered together, as to bind the transverse arch of the colon, the great curve of the stomach, and spleen, all together; and by its adhesion to the pancreas and meso-colon, they were likewise in this union. The epiploon was very hard and knotty. The stomach, by the same disease, was contracted near the small end [and] thick in its coats at this part. The meso-gaster and the cellular membrane that surrounds the vessels of the liver became thick and hard, so much so as to obstruct the passage of the bile into the gall-bladder, for there was no bile in the bladder.

“The gall-bladder was vastly large, it projected beyond the lower edge of the liver above two inches, and its coats were very thin. On opening it I found that it contained a thin pale fluid, of a light coloured whey, which had not any of the properties of bile. The inside of the gall-bladder was smooth, owing to its being so much stretched. The bile got easily into the gut, and was of a bright yellow.

“The liver rather less than common, softer, yet tougher than common.

“From this case may we not reasonably suppose that the gall-bladder does not secrete the bile; or that there are no ducts passing directly between the liver and bladder where these two adhere; for at the adhesion of the two the parts seemed sound?”—*Hunterian MS.: Dissections of Morbid Bodies*, No. 89, p. 139.

- 2342.** A firm lobulated mass, like thickened and indurated omentum, which protruded and was removed through a bayonet-wound in a soldier's abdomen. *Hunterian.*

The following history of the case was probably sent to Mr. Hunter with the preparation:—

“Josh. Wood, aged 21, second gunner in the second battalion of Royal Artillery, being on duty on the gun-wharf, near Chatham Barracks, in June 1788, attempted (as was supposed in a fit of insanity) to destroy himself by falling on his bayonet. It entered the abdomen nearly in a parallel line between the navel and ensiform cartilage, and, as we afterwards found, had passed through the back, close on the left side of the vertebra opposite, without injuring the intestines, &c.

“When I first saw him I attempted to pass my finger or a probe into the cavity of the abdomen, but could not find any passage. After he was taken to the hospital, towards the evening, we found a good deal of blood had come from the wound. The wound on the abdomen was dressed superficially, and that which we found in his back was dressed in the same way; indeed very little attention was paid to that, it being but small, and no blood appearing again.

“The next day a large substance, in appearance a conglomerate gland, had been found or drawn out with his fingers through

the anterior wound and lay on the outside of the abdomen ; it very much resembled the pancreas in substance and colour, and though I attempted to reduce it I could not succeed. A poultice was laid on it and renewed for two days, when it was judged proper to extirpate it by ligature, which, though tightened every day for ten days, did not prevent a supply of blood, as it was not the least discoloured till the last day, when, in two or three places, it had a dark appearance, but no disagreeable smell. A great mucous discharge exuded from it the whole time, so that his shirt was obliged to be changed every day, although the substance was surrounded with fresh tow.

"His pulse, notwithstanding his loss of blood at first, never sunk ; had little or no fever ; the natural secretions were carried on, and his appetite was not bad. He slept well in general, and never complained of pain till after the wound was healed, which was very shortly after the substance was removed ; he then complained of pain about the part injured, when costive, which was easily removed by the electuary and senna.

"Since he went to Bradford, in Yorkshire, his place of residence, I received a letter from Mr. Knight, a surgeon there, to whom I had written, inclosing the case, who says he continues well in every respect except when costive, which complaint is easily removed, as above.

"The above substance is flat, between four and five inches long, three broad, and near one thick, of consistence somewhat like a very strong coagulum, and of a colour nearly approaching the same. The texture has nothing of a regular or organized appearance, therefore is none of the viscera of the abdomen, and therefore must be a preternatural or diseased substance.

"From one view of this case it would appear a very extraordinary one, for supposing it to have been a diseased tumour in the belly, the circumstance of the man wounding himself at the very part is a concurrence of circumstances that would almost appear miraculous ; and that such a lump should have come through a wound made by a simple stab with a bayonet is almost beyond belief ; but if we can conceive that a portion of the epiploon pushed through, forming a sac, and this filled with blood, which coagulated, and the serum escaping, then, I believe, we may form a pretty just idea of it."—*Hunterian MS.: Cases and Observations*, No. 86.

Memorandum annexed by Mr. Clift.—"This case appears to have been drawn up by the regimental surgeon who attended the patient, and sent the protruded substance to Mr. Hunter, as it is impossible that Mr. Hunter should be a fortnight at Chatham in the year 1788. The last two sentences may possibly be Mr. Hunter's remarks on the case ; but as they are not in his handwriting, there is no clue to distinguish them. Mr. George Grant, an army surgeon, who had been a pupil of Mr. Hunter, and occasionally his amanuensis, very probably sent this case and specimen, as he is known to have done on other occasions about this period."

2343. "A portion of tuberculated omentum."—(*Hunterian MS. Catalogue.*) It is thickened and indurated, but does not appear to be otherwise altered in texture.

2343 A. A portion of great omentum, much thickened and firm on section ; its greatest thickness is three eighths of an inch.

Under the microscope the connective tissue was found to be increased, and its interspaces contained very numerous round nuclei, thickly aggregated in some places ; giant cells were observed in other places, having many peripheral nuclei and processes continuous with the connective tissue.

It was removed by abdominal section from a woman suffering from acute peritonitis, and she recovered. No symptoms of tuberculosis were observed at the time of the operation, but she died three months after it with a "disease in the abdomen of undoubtedly tubercular kind."

Presented by Lawson Tait, Esq., 1882.

2344. An omentum attached to the neck of a hernial sac, and in many parts much thickened and indurated. At its connexion with the sac nearly all the adipose tissue has been removed from the omentum : it is here converted into a tough glistening fibro-cellular tissue, like that of the thickened sac and other adjacent parts. In many parts, also, nearly all its tissue has been removed, leaving a wide-meshed irregular network formed of smooth, shining, round cords of various thickness and length (like blood-vessels long obliterated), variously branching and connected one with another. In some parts, where the fat and other tissues of the omentum remain and are only indurated, its surfaces are thickened and contracted, and shine like the surfaces of cicatrices.

From the Museum of Sir A. P. Cooper.

Tubercle.

2345. A portion of colon, to the surface of which a layer of lymph, from one quarter to one half of an inch in thickness, which was deposited on the peritoneum lining the walls of the abdomen, is closely adherent. The substance of the lymph is compact, and on its outer surface it presents the appearance of minute opaque yellowish masses of tuberculous substance thickly scattered in it.

Hunterian.

2346. "A mass of coagulable lymph thrown out in consequence of scrofulous inflammation found covering the intestines, &c."—(*Hunterian MS. Catalogue.*) It is a layer like that in the preceding preparation, but not presenting the appearance of tubercles; its inner surface was moulded upon the convolutions of the intestines.

2347. A portion of the walls of an abdomen, with a layer of coagulated lymph, a line in thickness, upon the inner surface of the peritoneum. The lymph is firm and compact, and is full of minute tubercles. The blood-vessels have been minutely injected; those in the lymph appear to be most numerous at its two surfaces; none can be traced in the tubercles. *From the Museum of Sir A. P. Cooper.*

2348. Two portions of small intestine, from the same patient as the preceding. They are united by a thick layer of lymph, which is deposited over the whole surface of their peritoneal coat, and contains numerous small masses of tubercle. The vessels of the lymph are minutely injected; it appears highly vascular. *From the Museum of Sir A. P. Cooper.*

2349. A portion of peritoneum, irregularly thickened and having numerous small masses of tuberculous matter in it. Its surface is rough with adhesions by which it was attached to the abdominal viscera.

From a young man who died with phthisis and disease of the brain. Signs of peritonitis commenced about six months before the patient's death; they were followed by ascites, but the fluid had been removed, and nearly all the signs of this affection had disappeared when the brain became diseased.

From the Museum of George Langstaff, Esq.

2350. A portion of peritoneum, with a small oval mass of earthy matter fixed on it. *From the Museum of Sir A. P. Cooper.*

Cysts and Morbid Growths in the Peritoneum.

2351. Part of a rectum, to the front of which a small cyst is attached by bands of false membrane.

Presented by — Ewbank, Esq.

- 2351 A.** A portion of omentum (not human), in which are two large thick-walled cysts with earthy matter deposited in their walls. The internal surface of the cyst, which is laid open, is wrinkled, rough, and of a yellowish-brown colour.

Hunterian.

- 2352.** A stomach, with the great omentum. The cavity of the omentum was distended by fluid. Its texture appears healthy, and there is little fat on it.

Hunterian.

- 2352 A.** A very large thick-walled cyst originating in the great omentum and removed by abdominal section. On opening the abdomen, the cyst was found to be very intimately adherent to the parietal peritoneum near the umbilicus. The great omentum was normal above, but below the transverse colon it could be traced as a thick calcified sheet to the upper part of the cyst, which was entirely within the omentum. The usual fatty and membranous free edge of the great omentum depended from the lower part of the cyst. A fold of mesentery completely separated the tumour from the pelvic organs, which were normal. On the inner surface of the cyst are many minute, rounded, low papillæ of a yellowish colour.

Microscopically they are composed of delicate connective tissue lined with elongated columnar epithelium; some of them are branched.

From a woman, aged 58, who had suffered for many years from symptoms resembling those of ovarian disease. The cyst had been tapped many times, and two years before the operation had ruptured and filled again.

For a further account see Trans. of Obstetrical Soc. vol. xxiii. 1881, p. 164.

Presented by Dr. G. Granville Bantock, 1882.

- 2352 B.** An oval cyst, about an inch and a quarter in diameter, lying within the great omentum and invested by its peritoneal coverings. A small endogenous cyst occupies its wall at one point.

The cyst contained a soft pulpy material, which showed under the microscope nothing but granules and fat. Upon the inner surface a coating of small lymph-like cells was found.

From a lady, aged 48 years, upon whom abdominal section was performed for the removal of a uterine fibro-myoma. The omentum was adherent to the tumour and contained many small cysts like that preserved.

Presented by Dr. G. Granville Bantock, M.D., 1882.

- 2352 c.** A cyst formed by dilatation with fluid of the lesser cavity of the peritoneum. At the upper part of the preparation is the left lobe of the liver ; at the lower part is the distended stomach, laid open, the cardiac orifice being marked by a glass rod. Lying between the liver and the stomach, and somewhat to the right, is a large cyst with thick fibrous walls ; the cyst cavity extends behind the stomach as far as the attachment of the transverse meso-colon, where a large aperture indicates the point at which it was continued between the layers of this fold of peritoneum.

Near the foramen of Winslow a sewing-needle was found which, it may be supposed, was swallowed and probably had set up inflammation leading to the obliteration of that opening. The patient was a lunatic. The abdomen was opened, and death took place on the fifth day after the operation.

Presented by Lawson Tait, Esq., 1883.

- 2353.** The omentum of a cat, with numerous small tumours attached to its surfaces. The tumours are round or oval, and some of them superficially lobed : they are of various sizes, from half a line to half an inch in diameter ; some of them are isolated, many are grouped together in irregular large masses ; they are all slenderly attached to the omentum, the tissue of which, even on the parts to which the tumours are attached, appears healthy. The surfaces of all the tumours are smooth and of a pale yellowish-white colour. Sections of some of them show that they are composed of a uniform, compact but soft, pale yellowish substance, traversed here and there by obscure fibrous lines.

From the Museum of George Langstaff, Esq.

- 2354.** A stomach, with part of the great omentum. The omentum is very much enlarged ; it measures fourteen inches in length ; its fat is nearly all removed ; and it is beset by numerous tumours, various in size and shape, but closely

resembling those last described, except that they are rather paler and firmer, and are intersected by numerous short, wavy and circling white fibres. At the lower part of the omentum many of these tumours are collected into one large, irregular, nodulated, hard mass: some of the same kind are attached along the lesser arch of the stomach. The texture of the omentum intervening between the tumours is healthy.

The patient, a female aged 21, was considered to have all the signs of pregnancy, and the time for delivery being past, was supposed to have an extra-uterine foetus, the masses of tumours felt through the distended abdominal walls being thought to be parts of a child. She died of pulmonary phthisis. The other abdominal organs and the uterus and ovaries were healthy.

From the Museum of Robert Liston, Esq.

- 2354 A.** A portion of small intestine, with its mesentery minutely injected. Both surfaces of the mesentery are studded with small nodules of uniform fleshy structure, and for the most part of yellowish-white colour; but a few are faintly tinged with brown. They are numerous and closely aggregated at the attachment of the intestine to the mesentery, and some are scattered over the peritoneal covering of the bowel.

From a case of melaniosis.

Presented by Francis Kiernan, Esq., 1871.

- 2355.** An elongated and irregularly lobulated tumour developed in the great omentum. The transverse colon passes along its posterior aspect, but though closely attached to the tumour, its coats do not appear to be diseased. The basis of the tumour is fibrous and fatty.

From a middle-aged man. The tumour lay transversely across the upper part of the abdomen, and was easily felt during life.

Presented by Dr. Roberts, 1864.

- 2356.** A great omentum much thickened by a soft cancerous infiltration throughout its substance. The growth appears to consist of a conglomerate mass of nodules. The whole surface of the peritoneum and the diaphragm were studded

with nodules of a similar material, the disease being secondary to cystic cancer of both ovaries.

Under the microscope the morbid growth showed alveoli filled with small spheroidal epithelial cells. The patient was an elderly woman.

Presented by Frederic S. Eve, Esq., 1882.

- 2357.** A portion of the great omentum with the corresponding part of the transverse colon, extensively thickened by cancerous growth, as in the preceding specimen; this takes the form of small nodules which thickly stud the serous membrane. The rest of the peritoneum was affected in a similar manner.

From a man aged 62. He had been ill three months with pain after food and vomiting. He was greatly emaciated and died soon after his admission to the Hospital. The disease had apparently extended to the peritoneum from the stomach.

Presented by Dr. Goodhart, 1876.

- 2358.** A portion of a great omentum similarly but more evenly thickened and infiltrated by a soft whitish cancerous growth.

Presented by Alban Doran, Esq., 1880.

- 2359.** Section of a mass of colloid (gelatiniform) cancer from the peritoneum. The original texture of the peritoneum cannot be discerned: the interior of the abdominal walls and the whole omentum were the seat of layers and masses of the morbid growth, consisting of congeries of small cells, variously grouped and intersected, and filled with a transparent semifluid yellowish substance like thick gum-mucilage or half-melted jelly. Several quarts of similar substance, discharged from the cells, were removed from the abdominal cavity.

The patient was a woman about 45 years old. The disease had long existed, and affected nearly every part of the peritoneum; it perhaps had its origin in an ovary, as in No. 2356. It had been treated as ascites.

Presented by Sir James Paget.

- 2360.** A similar specimen from the same patient.

2361. Section of a small, round, flattened tumour, attached by a small pedicle to the interior of the abdomen of an Ox.
Hunterian.
2362. The other section of the same tumour. *Hunterian.*
2363. A small, round, fatty tumour, attached by a short narrow pedicle to the omentum of an Ox. *Hunterian.*
2364. Sections of a small round tumour which was found loose in the cavity of the abdomen of a Lion. It consists of a pale firm substance, nearly like fibro-cartilage, enclosed in a thin capsule. *Hunterian.*
2365. Sections of a small, flattened, oval tumour which was found loose in the abdomen of the gentleman from whom the enlarged spleen (No. 2866) was taken. Like that last described, it is of firm, apparently fibrous, texture; and is enclosed in a thin smooth capsule, the exterior of which is polished like peritoneum. *Hunterian.*
2366. A similar specimen; but its substance appears softer, and the capsule is rather thicker. *Hunterian.*
2367. "A small tumour, with bone in its centre" (*Hunterian MS. Catalogue*); probably a loose body, partially ossified, from a serous cavity.

Entozoa in the Peritoneal Cavity.

2368. A very large bilocular cyst, containing hydatids, from the abdominal cavity. Portions of the stomach and intestines are attached to its external surface; its interior is smooth and polished. Most of the hydatids in it are entire.

Hunterian.

2369. A similar large cyst, containing hydatids, attached to the outer surface of the colon of the same person. *Hunterian.*

2370. The bladder and rectum, from the same person, together with part of a large hydatid cyst, which is situated between them on their right side, and which, by its pressure, produced retention of urine. The cyst has the same characters as those in the preceding specimens; it has been emptied, and its walls, which are intimately united with the surrounding tissues, are in nearly their whole extent smooth and polished. A large aperture has been formed by ulceration in the fundus of the bladder; but the escape of the urine was prevented by the formation of a thick layer of lymph beneath the peritoneum. It covered the fundus of the bladder like a cap and has been partially reflected. *Hunterian.*

The following is an extract from the history of the patient from whom the last three preparations were taken. It is recorded by Dr. John Hunter (by whom the preparations were given to Mr. Hunter) in the 'Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge,' vol. i. p. 34 (London, 1793):—

"Thomas Bell, aged 46 years, a carpenter, and a stout man, died suddenly, March the 17th, 1786.... He had been complaining for four or five weeks of more or less pain and difficulty in making water.... When questioned by a surgeon respecting his difficulty of making water, he said that he had been in much pain, but was now easier, and that some urine had come away involuntarily. He was able to sit up in bed at this time, but in an hour after, in attempting to turn himself, he expired.

"The body was examined thirty hours after death.

"The brain and the thoracic viscera were all sound.

"The abdomen was very tumid, in consequence of the immense size of the bladder, which reached fully eight inches above the pubes; its fundus being within two inches of the arch of the colon. Upon letting out the urine, which amounted to five or six pints, it appeared that there was a large tumour between the neck of the bladder and the rectum, which completely filled the pelvis, and thrust the bladder forwards and upwards. On cutting into the tumour much water rushed out, and along with it many hydatids of various sizes, the largest about an inch and a half in diameter, and the smallest not larger than a pin's head. The tumour was entirely filled with hydatids and the water that surrounded them, and both together they were more in quantity than a pint and a half. There were besides two or three smaller tumours near the neck of the bladder, also containing hydatids;

and there were two bodies, not larger than common beans, adhering to the bladder, and containing a soft cheese-like substance.

“Between the stomach and the spleen, and over one end of the pancreas, there was a large tumour [preserved in No. 2890], to which the three above parts adhered, the stomach and pancreas slightly by cellular membrane, the spleen more intimately, so as to make a part of the tumour: with the spleen it was about ten inches in diameter. It was irregularly shaped, and made up of several smaller tumours. There was considerable variety in the contents of those tumours: in one there were hydatids of various sizes, like those mentioned above; in another there was a substance like isinglass, a little softened in water; in a third there was clear water in a considerable quantity, with very minute particles like small grains adhering slightly to the sides; and in a fourth there were hydatids, some full, others burst, and with their coats compressed together, and forming the isinglass-like substance. The tumours or sacs had all thick coats, endowed with a strong contractile power that forcibly protruded their contents through any opening made into them. They had two coats—an outer, which was strongest and thickest, and an inner, which was tender, soft, and pulpy.

“As to the structure of the hydatids, it was the same in large and small—a transparent bag, uniformly round and smooth, filled with clear water. The bag appeared to consist of two coats or layers; for, on handling them, the outer coat would get rumpled, and occasion a degree of opacity, but, by wiping the hydatid, it became again clear and transparent. They appeared to be completely spherical. When they were opened, their coats possessed a strong contractile force, so as to roll themselves up in part. On examining a number of hydatids, some of them appeared of an amber colour, and with thicker coats than the rest; and when opened their inner surface was found covered with small hydatids, which were not so large as the heads of pins, and looked like minute pearls or studs set in the inner coat.

“Some of the water containing the small grains mentioned above was examined with a microscope, and found to have floating in it numerous minute hydatids; of which the largest were the little grains visible to the naked eye, and $\frac{1}{200}$ th part of an inch in diameter; the smallest were less than a red globule of blood; and they were of all intermediate sizes. The coats of the largest were a little rough, with numerous filaments or villi; and on using a deeper magnifier, they had somewhat of a mulberry appearance.”

2371. A portion of a great omentum containing numerous hydatid cysts. They vary in size and in the appearance of the parasites, but the containing cyst in all is tough and has a thick corrugated interior membrane. The hydatids are in two distinct forms. In one, the usual form, shown

at the lower part of the specimen, the parent cyst is circular and contains daughter-cysts, and these again others, cyst within cyst. In the other form they appear as irregularly shaped pedunculated cysts, growing sessile from a stalk, and these do not possess a parent cyst.

From a woman aged 32. She came to the Samaritan Hospital for the treatment of abdominal tumour at the sixth month of pregnancy. The tumour was believed to be ovarian. Abdominal section was performed, and hydatid disease of the omentum discovered. The diseased mass was removed, and the woman recovered, although the abdominal wound was twice broken open and parturition took place on the eighth day after operation. The case is recorded in the 'Medical Times and Gazette,' vol. ii. 1878.

Fourteen months after the operation symptoms of pneumonia came on and hydatids were expectorated for several weeks; the patient's health began to fail; and she died twenty-one months after the removal of this specimen.

Presented by J. Knowsley Thornton, Esq., 1879.

2372. A *Cysticercus* (probably *C. tenuicollis* = *Tænia marginata*) from the omentum of a "giddy" Sheep. *Hunterian.*
2373. A portion of omentum, with a collapsed hydatid cyst between its layers. *Hunterian.*
2374. A thin-walled spherical membranous sac, containing an hydatid cyst, collapsed and beset on its inner surface with minute opaque white granules, which consist of groups of *Echinococci*. A portion of omentum is attached to the outer surface of the cyst. *Hunterian.*
2375. Several globular cysts, attached by long slender pedicles to the mesentery of a Sheep. They are formed of tough thin membrane; and one of them, which is laid open, is filled with the membranes of hydatids. *Hunterian.*

Specimens of Diseases in the Peritoneum in other parts of the Museum are:—
Peritonitis and its effects: 140, 141, 148, 150, 151 P, 167, 172, 173, 175, 2395, 2396; and many of the specimens of Hernia.
Tumours: 324, 325, 466, 521, 536; and, as affected by contiguity or extension, the specimens of Cancer and Tubercle of the Stomach and Intestines.

Series XXII. INJURIES AND DISEASES OF THE STOMACH AND DUODENUM.

- Softening of Stomach : 2376.
- Foreign bodies : 128 to 131, 133, 2377. to 2383.
- Hypertrophy of Coats : 2414, 2415, 2428.
- Dilatation : 2411, 2428.
- Contraction : 2391, 2408, 2410.
- Ulceration from foreign bodies : 2383, 2394.
- Effects of Poisons : 2384 to 2390.
- Acute Gastritis : 2392.
- Chronic „ : 2391, 2401.
- Ulceration : 2391 to 2402.
- Chronic perforating : 210, 2394 to 2399, 2400 to 2402, 2413, 2414 ?
- Superficial and Hæmorrhagic Erosion : 2392, 2393.
- After Burns : 2392.
- Cancerous Ulceration : 2411, 2413, 2414, 2417 to 2425.
- Perforation of Vessels : 2402.
- Perforation of Coats of Stomach by Cancer : 2419.
- Stricture :—
- Pyloric, Simple : 2398.
- „ Cancerous : 2413, 2414.
- Of Cardia : 2425, 2427.
- Of Cardia from External Causes : 2427.
- Hourglass Contraction : 2416.
- Syphilitic disease : 2427.
- Morbid Growths, simple and polypoid : 2403 to 2406.
- Cancer (Cylindrical-celled) :—
- Polypoid : 2407.
- Pyloric : 2408 to 2415, 2419, 2420, 2426.
- Cardia : 2416 to 2418, 2421, 2422, 2425.
- Cancerous Contraction : 2408, 2409.
- Healing Cancer : 2424 ?
- Gastrostomy : 2427 A, 2427 B.
- Gastric Fistula : 2427 C.
- Duodenum :—
- Obstruction by Foreign Bodies : 2379.
- Ulceration : 2429 to 2431.
- „ after burns : 2429 to 2431.
- Healing Ulcer : 2431.
- Stricture : 2428.
- Perforation of Vessels : 2430.
- Morbid Growths : 2432.

Digestion after Death.

2376. The stomach [of an Hyæna inverted. The walls of its cul-de-sac and right half are reduced to a pale, transparent, flocculent, gelatinous-looking substance, and in some parts are completely destroyed by the action of the gastric fluid after death.

From the Museum of George Langstaff, Esq.

For other specimens of digestion of the stomach see the Physiological Series, Nos. 591 to 594 A; and for Mr. Hunter's account of the process, see the Catalogue of the Physiological Series, vol. i. p. 183.

Foreign Bodies from the Stomach.

2377. The remains of a knife which was swallowed two months before the death of the patient.

The following is taken from a pamphlet, entitled "A Statement of the case of William Dempster, a juggler, who died in consequence of having swallowed a table-knife. By John Hadfield, Middlewich."

"William Dempster, a juggler, when at Carlisle, about the middle of November, 1823, as he was attempting some tricks in a public-house, for the amusement of the persons present, accidentally swallowed a table-knife, having a bone handle, the end of which went down first into the stomach. He left Carlisle about the 28th of December, and travelled in a stage-coach to Manchester, came by a boat to Middlewich in Cheshire, and died there on the 16th of January, three days after his arrival.

"I did not see Dempster until he was in a dying state, his death occurring in the course of two hours afterwards; but he gave a tolerably distinct account of the manner in which the accident occurred, and of his journey from Carlisle. He said, 'Having offered for a small sum of money to swallow a table-knife, a new one was accordingly bought from a neighbouring shop. The method, by which I pretended to swallow it, was, to pass the handle and part of the blade down my throat, and hold the point of the knife fast with my teeth. When I was on the point of drawing it out again, some person, coming unexpectedly behind me, gave me a smart stroke on the back, the surprise of which caused me to loose hold of the point, and immediately the whole knife slipped into the stomach. I directly made very violent efforts to throw it up, but all in vain; and the endeavours of the surgeons were equally useless to get it up with an instrument.'"

After death the knife was found resting on the great arch of the stomach. In the recent state it is said that the stomach showed marks of violent inflammation. These were not dis-

cernible when the stomach was received; it was very large, but its coats were entire, firm, and of their ordinary thickness; they appeared to have undergone no change of structure. The knife and handle measure eight inches in length. The horn of the handle has been completely dissolved, the rivets have fallen out, and about one third of the edges and point of the blade is destroyed; the remaining iron is rough, and covered with rust.

Some further particulars of the case are given in "An Account of William Dempster, who swallowed a table-knife nine inches long," by Thomas Barnes, M.D., M.R.C.S.L., in the 'Edinburgh Philosophical Journal,' vol. ii. p. 319 (1824).

2378. The blades and other iron or steel portions of three or more clasp-knives, which were swallowed by a soldier, and voided, *per anum*, at St. George's Hospital. Their surfaces and edges are rather deeply corroded.

The man recovered.

Presented by Sir Everard Home.

2379. The stomach of a woman who, for many years, was in the habit of swallowing pins. From the pyloric portion, nine ounces of pins, of a purple-black colour, not corroded, of various sizes, but all bent or broken, were removed (see next specimen). This portion of the stomach is highly vascular, and the mucous coat is much thickened and closely studded with outgrowths of various forms, some broad and flat, and others very prominent and flattened laterally from mutual pressure.

The upper portion of the duodenum is distended by a mass of pins very tightly packed and wholly obstructing its tube. These weighed nearly a pound.

From a married woman, 41 years of age. When seventeen years old, and again shortly after the birth of her fifth child in December 1842, she was affected with severe hæmatemesis. In the autumn of 1845 she complained of frequent sickness, with pain in the epigastrium and left groin, and between the shoulders, shooting through to the left breast. Upon examination a hard tumour was discovered in the left iliac fossa, which moved freely across the abdomen as she turned from side to side. The nausea increased and the stomach rejected every thing; large quantities of a green ropy mucus, occasionally mixed with blood, were thrown up; and the emaciation and exhaustion became so great that her death was daily expected. The vomiting, however, ceased, she took food and gradually gained strength, and returned almost

to her usual health. After the lapse of five years similar symptoms came on; and in October 1850 three weeks of incessant vomiting terminated in her death. On *post-mortem* examination the stomach was found drawn down to the pubes, and in its form resembled a champagne-bottle. The pyloric end lay beneath the arch of the pubes, and the duodenum under a portion of the sigmoid flexure of the colon. The intestines were of very small calibre. The cæcum and colon resembled the small intestine, the bands and sacculated appearance being scarcely discernible. No ulceration was apparent throughout the whole length of the intestinal canal, nor was there found the slightest peritoneal attachment or appearance of inflammation within the cavity of the abdomen. There was nothing abnormal in the other viscera.

It was now ascertained for the first time by the medical attendant that the patient had been from her childhood in the habit of swallowing pins, having previously bent the head and point together. She had a keen appetite, and would always partake of any food she fancied, however improper or indigestible. When a child she was fond of eating starch and slate-pencil.

The above particulars are extracted from the report of the case in the 35th vol. of the 'Medico-Chirurgical Transactions,' 1852.

Presented by John Marshall, Esq.

2380. The pins taken from the above-described stomach. A small brass weight is among them.

Presented by John Marshall, Esq.

2381. A few pins which were found in and around the bed of the same patient. They are bent as if intended to be swallowed.

Presented by John Marshall, Esq.

2382. The stomach of a young Rufous Tinamou.

The bird, which was bred in the Zoological Gardens, had swallowed a piece of coarse iron wire over an inch in length; it has penetrated the thickest portion of the muscular parietes of the gizzard to within two lines of its serous coat.

Presented by the Zoological Society, 1868.

2383. Part of the stomach of a Porcupine, in which are four ulcers, produced by the irritation of a large bezoar. Two of them are more than an inch in diameter, and the ulceration extending through the base of one of these has perforated all the coats. The bases of the other ulcers are smooth and thickly covered with pieces of lymph or mucus.

Hunterian.

Effects of Poisons.

2384. Portion of the stomach of a person who was poisoned with sulphuric acid. Its mucous membrane is pale brown and greyish; but it is smooth, and does not appear altered in its texture. Mucus is closely adherent in a thin layer to a part of its surface; the other part has been cleaned.

From the Museum of George Langstaff, Esq.

2385. Portion of the stomach of a person who was poisoned with sulphuric acid. The mucous membrane is rough and shaggy, having been partially destroyed. It has a rusty tinge, which, in the lower part of the preparation, insensibly passes into a brownish black. Dark, dotted, branched lines, caused by the coagulation of blood in the vessels, can be seen in some places.

Presented by Sir James Paget.

2386. Portion of the stomach of a person who took hydrochloric acid. Its mucous membrane is of a deep brown colour, mixed with shades of grey and black, contracted and flocculent; small portions of it appear to have been destroyed. The peritoneal coat is uninjured, but both it and the cellular tissue between it and the mucous coat appear hardened and contracted.

Presented by John Quekett, Esq.

The patient, a healthy man aged 40, took the poison fifteen hours before death. Shortly after taking it he walked three quarters of a mile, but soon began to suffer severely with thirst and pain in his throat and stomach. Magnesia and other remedies failed to relieve him.

Autopsy:—The liver was of a dark colour. The stomach was much distended, of a dark lead colour, and its vessels full of black blood; the intestinal canal was of the same leaden hue, and its vessels also much engorged with blood. The peritoneum was much injected; and slight depositions of lymph were found throughout the whole peritoneal coat of the alimentary tube. The epithelium of the stomach and œsophagus had been removed. The coats of the stomach were much affected, and in many parts nothing but the peritoneal tunic was left; in taking it out it gave way. The whole internal surface of this viscus was covered with a thick coating of a yellowish colour, resembling paste. “Underneath this the whole internal surface was stained of a black colour, in some parts more than at others, presenting a charred appearance; this was most marked near the cardiac and pyloric

orifices, and near the great cul-de-sac: this blackening extended also through the duodenum, its whole length, especially on the prominent parts of the numerous valvulae conniventes, the intervals being stained of a greenish-yellow colour by bile; and spots were observed here and there on the jejunum for about a foot and a half from its commencement."—*Extracted from the case reported by Mr. Quекett in the 'London Medical Gazette,' vol. xxv. p. 285 (London, November 15, 1839).*

- 2387.** The cardiac portion and great end of the stomach of a person who was poisoned with oxalic acid. Its mucous membrane is softened, and variously mottled with black, grey, and ash-colour, from the action of the acid on blood congested in its vessels.

From the Museum of George Langstaff, Esq.

- 2388.** Portion of the stomach of a young woman who died thirteen hours after taking half an ounce of arsenious acid. The appearance of the stomach shortly after death was thus described by Mr. Hunter:—"The stomach contained about twelve ounces of a greenish fluid, with a curdy substance in it. On the internal surface of the great curvature, near the cardia, a portion of the villous coat, about the size of a crown piece, was partially destroyed and of a dark red colour, with a regularly defined edge, and some of the arsenic adhering to different parts of its surface. The rest of the stomach was in a sound state."

Of these changes no trace is now visible, but the injured portion of the mucous membrane is less wrinkled than the rest, and some small shreds are adherent to it. *Hunterian.*

The history is in "The case of a young woman who poisoned herself in the first month of pregnancy, by Thos. Ogle, to which is added an account of the appearance after death, by the late J. Hunter," in the 'Transactions of the Society for the Improvement of Medical and Chirurgical Knowledge,' vol. ii. p. 63.

- 2389.** The stomach of a girl who poisoned herself with arsenic. It is closely contracted, the mucous membrane is very deeply and irregularly corrugated, and traces may be seen of increased vascularity, which in the recent state was general and extreme. Several large and thick masses of hardened mucus are adhering like fibrin to the mucous membrane.

The patient was 19 years old. The quantity of arsenic swallowed was about half an ounce, and the signs of poisoning were severe.

From the Museum of George Langstaff, Esq.

2390. Portion of the stomach of a girl who was poisoned with half an ounce of powdered colchicum-root. Its mucous membrane was almost uniformly of a deep red colour. In the recent state, also, it appeared softened.

From the Museum of George Langstaff, Esq.

Ulceration of the Stomach.

2391. A stomach of very small size, measuring only five inches in length and nearly six inches in its greatest circumference. Its coats are from three to four lines in thickness, and were soft and easily torn, but with no appearance of a cancerous change of structure. Its mucous membrane is flocculent, and appears uniformly superficially ulcerated.

The patient was a gentleman 70 years old. He had been subject to gout for forty-five years, and was in the habit of treating it with doses of from 100 to 120 drops of colchicum-wine, and from 100 to 200 drops of laudanum, which usually caused stupor for one or two days, and then vomiting. For nine months before his death he abstained from these medicines, but had severe pain in the stomach and intestines, with uncontrollable vomiting. Besides the changes of structure in the stomach, extensive effects of former peritonitis were found, which were probably the consequence of a blow over the region of the stomach received in youth.

Presented by William Baxter, Esq.

2392. Part of the pyloric end of a stomach, from which irregular strips of the mucous membrane have been removed by ulceration. Some parts of the ulcerated surfaces are of a brown colour.

From a child 5 years old, who died forty hours after being slightly burnt on the back, arms, legs, and epigastrium. Mr. Swan says of the appearances after death:—"On opening the abdomen every part appeared sound except the stomach, in the villous coat of which were several spots and stripes, like sloughs, extending deep, and quite black."

A further account is given in his "Practical Observations," in the 'Edinburgh Medical and Surgical Journal,' vol. xix. p. 344 (1823).

The ulcer has the characters of what has been termed *hæmorrhagic erosion*, or *hæmorrhagic ulcer*, of the stomach. On the occurrence of *perforating* ulcers of the duodenum as one of the consequences of burns, see a paper "On Acute Ulceration of the Duodenum in Cases of Burns, by T. B. Curling," &c., in the 'Medico-Chirurgical Transactions,' vol. xxv. p. 260 (London, 1842); and the preparation, presented by him, in this Series, Nos. 2429 to 2431. See also No. 2457, in the next Series.

Presented by Joseph Swan, Esq.

- 2393.** Portion of a stomach, in the mucous membrane of which there are numerous minute, oval and round, superficial, smooth-edged ulcers [*Hæmorrhagic erosions*]. In the recent state the bases of many of them were black with little effusions of blood. The tissue between and beneath the ulcers is healthy.

From a woman who died with malignant disease of the breast and lungs, specimens of which are preserved in Nos. 391-2.

Presented by Sir James Paget.

- 2394.** Portion of the pyloric part of the same stomach as No. 2383, exhibiting a small superficial ulcer, of which the base is covered by a greyish material like a slough.

Hunterian.

- 2395.** Portion of the stomach of a girl seventeen years old, in which a circular perforating ulcer, one third of an inch in diameter, extends with a slight obliquity through all the coats, just in front of the gastro-hepatic omentum, and about two inches from the cardia. The edges of the ulcer are smooth and abrupt; and the orifice in the peritoneum, which is rather smaller than that in the mucous membrane, has an exactly defined sharp border. The immediately adjacent part of the mucous membrane is condensed and smooth; the rest appears healthy.

Hunterian.

The preparation is figured in Baillie's 'Morbid Anatomy,' fasc. iii. pl. v. f. 2. It presents a characteristic example of the *simple chronic ulcer of the stomach* of Cruveilhier,—the *perforating ulcer of the stomach* of Rokitsky.

The following is, most probably, the history of the patient:—

"A young lady about 15 years of age, and remarkably healthy until the preceding summer, when she occasionally complained of

a pain at her stomach, but so trifling that her family, imputing it to her particular time of life, paid little attention to it, was, in the beginning of March last, after having supped in a very moderate manner, taken ill at going to bed with violent pain at the stomach, sickness, and vomiting, which symptoms continued great part of the night. Next morning, between eleven and twelve o'clock, I found her, though still in bed, cheerful, and neither complaining of sickness nor of pain; but her pulse was extremely quick, with considerable tension and tenderness of the præcordia and abdomen, which showed that her illness was of a more serious nature than her relations apprehended, and determined me to call again in the evening. I ordered for the present an emollient glyster, the præcordia and abdomen to be fomented, and a camphorated saline draught, with the addition of about twenty grains of an absorbent powder, and three or four drops of the tinct. opii, to be given every four hours. But this, and everything else she took, was immediately thrown up; yet she passed the day tolerably well, expressed great relief from the fomentation, and in the evening was in good spirits, until about nine o'clock, when she became suddenly restless, and with uncommon eagerness and anxiety desired to be raised up in bed, spoke in a strong voice to one of her sisters who was assisting her, and instantly fell back, without sense, motion, or the least appearance of life. I came into the room a few minutes after the accident, and at first was persuaded that she had only fainted, but upon approaching the body I was soon undeceived, and found that she was actually dead.

"So sudden and so unexpected a death made me extremely desirous of ascertaining the cause; and the family, being equally anxious, readily consented to have the body opened, which was accordingly done two days afterwards by Messrs. Home and Bell, gentlemen of known anatomical accuracy and experience.

"The abdomen contained two or three quarts of a turbid fluid, and the intestines everywhere had the appearance of having suffered a high degree of peritoneal inflammation; but the cause of her sudden death still remained undiscovered, until, the stomach being brought forward, I perceived on its anterior part, nearly towards the cardia, a round opening sufficient to have admitted a common-sized quill, and which, upon examining this organ more particularly, appeared evidently the effect of an internal ulcer that had destroyed all the coats of the stomach but the peritoneal, which last had probably burst or given way during the action of vomiting. The ulcer was round, about the size of a sixpence, and with hard or callous edges, a proof that it had been of some standing; the coats of the stomach at this part were also considerably thickened, though everywhere else they had a natural appearance.

"We likewise observed a number of diseased lymphatic glands in the duplicature of the peritoneum, where that membrane passes off from the smaller or superior curvature of the stomach to the pancreas."

“Three instances of Sudden Death, with the appearance on Dissection,” by James Carmichael Smyth, M.D., in the ‘Medical Communications’ (8vo, London, 1790), vol. ii. p. 466.

2396. Portion of the stomach of a lady 22 years old, in which an oval ulcer, of the same kind as that last described, has perforated all the coats. The aperture is much larger in the interior than on the exterior of the stomach. Its internal and extreme border is formed by the smooth margin of the ulcerated mucous membrane. Within this border, and lying deeper in the ulcer, is an abrupt edge, formed by the muscular coat, ulcerated in the same form, but to a less extent; and from this edge the ulceration proceeds with a slight and graduated shelving of its margin through the peritoneal coat, the aperture in which is exactly defined and sharp. Lymph is effused in a thin layer upon the external surface around the ulcer. *Hunterian.*

2397. Portion of the œsophagus of the patient from whom the stomach last described was taken. Its mucous membrane appears darker than usual; it is otherwise healthy. *Hunterian.*

2398. Portion of the stomach of a nobleman, in which, close to the pylorus, there is a small oval perforating ulcer, with smooth abrupt edges, through which the contents of the stomach had escaped into the peritoneal cavity. Near this ulcer, and directly over the pylorus, is a smaller ulcer of the same kind, which has destroyed only the mucous membrane. The adjacent tissues appear condensed and contracted towards the ulcer; the pylorus also is much contracted. *Hunterian.*

2399. Portion of the posterior wall of a stomach, in which there is a large irregularly bordered perforating ulcer. The outline of the ulcer is irregular, as if it were formed by the coalition of two or more oval ulcers. At its extreme circumference it has destroyed only the mucous membrane. Just within its outer edge, which is smoothly rounded, but abrupt, some of the muscular fibres are seen terminating abruptly at the margins of the deeper part of its base, which, to the edge of the perforation, is formed of the con-

densed peritoneal and subserous tissues. The edges of the perforation are thin and sharp. Behind the ulcer the stomach adheres closely to the pancreas. *Hunterian.*

2400. Portion of a stomach, in the mucous membrane of which, below the lesser curvature, there are two nearly oval ulcers, each about half an inch in diameter. They have smooth sharp edges, like the preceding, and obscurely granulated bases, on which, in one of them, the open orifice of a small blood-vessel appears. The adjacent mucous membrane is healthy. *Hunterian.*

2401. A stomach with the greater part of its anterior wall removed to show a chronic ulcer at the lesser curvature. It is nearly circular, has a smooth surface and thick edges. The mucous membrane in other parts of the stomach is thick and mammillated by chronic inflammation. An incision has been made in the floor of the ulcer to show the thickness of the remaining coats of the stomach.

Presented by Dr. Goodhart, 1878.

2402. Portion of a stomach, in which an ulcer extended through the mucous membrane into a large vein, opening it in two places and giving rise to fatal hæmorrhage. The vein has been injected and is unnaturally large and varicose.

Hunterian.

Tumours and other allied Morbid Growths in or involving the Stomach.

2403. A longitudinal section of the stomach of a Codfish, and of a large tumour attached to it. The tumour is of a somewhat oval form, and measures about nine inches and five inches in its two chief diameters: it appears to have grown between the coats of the stomach, for the outer coat may be traced for a short distance over its surface. The greater part of it is composed of a very dense and compact semitransparent substance, traversed by fine bundles of white shining fibres, which are variously arranged, but chiefly radiate from the part at which the tumour is attached to the mucous membrane of the stomach. The

exterior of the tumour is formed of a thick layer of pale fibrous tissue enveloping that just described; and in its centre is a large irregular cavity, formed, apparently, by ulceration or softening of its substance. The mucous membrane and the other adjacent parts of the stomach appear healthy. *Hunterian.*

- 2404.** Half of a tumour from the stomach of a Codfish, apparently originating in the submucous areolar tissue. The section shows a homogeneous basis of pale grey colour, intersected in various directions by curving bundles of white glistening fibrous tissue. In the centre is a small cavity.

The remainder of the tumour is No. 379.

- 2405.** Portion of a stomach, the mucous surface of which is studded with lobulated, pedunculated, polypoid growths, most of them from a quarter to half an inch in length. Many of the growths are flattened at the sides, as if from mutual pressure. The mucous membrane of the entire stomach was affected in the same manner.

From a gentleman 76 years of age, who, though his health otherwise was good, suffered constantly from dyspepsia, accompanied by a peculiarly white tongue. He is said to have always been very plain and moderate in his diet.

Presented by George Skinner, Esq.

- 2406.** Polypoid tumour from the psalterium of an Ox. It forms a deeply lobulated mass of considerable size springing from a small pedicle, and is composed of reticulated fibrous tissue. Its free surface is not now covered by epithelium, but is horny and fibrous, and in one part papillæ were seen. One of the lobules has been cut open to show its structure.

Purchased, 1875.

- 2407.** The greater portion of a stomach, on the mucous surface of which are several isolated vascular excrescences varying in size from one eighth to an inch and a half in diameter. On section they exhibited the ordinary appearances of medullary cancer, and the tissue contained well-marked cancer-cells. The largest mass, situated about the centre of the lesser curvature, and about an inch and a half in

diameter, has become gangrenous. The slough is almost detached and involves the entire thickness of the coats of the stomach. The result was a perforation an inch in diameter, which was partially closed by recent adhesions to the under surface of the left lobe of the liver.

From a married woman aged 36, who died in the London Fever Hospital. She had never had good health, but her symptoms presented no definite character till three weeks before her admission. At this time she was seized with pain in the abdomen, sickness, and prostration. She was sent to the Hospital as a case of "fever." Her symptoms were extreme prostration, rapid pulse, epigastric pain, bilious and bloody vomit, and crepitation over the bases of the lungs. (Path. Soc. Trans. vol. xiv. p. 155.)

Presented by Dr. Murchison, 1862.

2408. Part of a stomach, which is much reduced in size, and of which the walls are in every part about half an inch thick. The greater part of the increase of thickness is in the situation of the submucous tissue, in the place of which is a layer of hard and dense, opaque-white, cancerous substance, from one quarter to one half of an inch in thickness, intimately united with the mucous membrane, which presents an entire but coarsely granulated and knotted internal surface. External to this hard white layer is one, from two to four lines thick (its varying thickness in different parts corresponding with that of the healthy muscular coat), which consists of a firm, grey, semitransparent substance, traversed by vertical, fibrous bands like partitions. These bands appear to proceed from the white cancerous submucous substance, and pass, variously branching and uniting with one another, through the semitransparent layer to the peritoneal coat, which is thickened and hard.

From the Museum of John Taunton, Esq.

2409. A similar specimen, exhibiting the same disease less advanced in its degree. The mucous membrane over the seat of disease is smooth and unwrinkled, except at the pylorus.

Hunterian.

2410. A stomach and pylorus. It is much contracted, and the walls are uniformly infiltrated and thickened by a cancerous growth. The mucous membrane is rugose and spongy.

The patient was an inmate of the Hanwell Lunatic Asylum. She presented during life the usual symptoms of cancer of the stomach. The growth showed characteristic appearances of cancer.

Presented by Dr. Hawkes, 1867.

2411. A stomach, greatly enlarged, of which the walls in every part, except the cul-de-sac, are increased to a thickness of from half an inch to nearly an inch. The chief increase is due to the formation of a firm, but not hard, opaque-white, probably cancerous substance, of very close, but apparently filamentous, texture, beneath the mucous membrane. The substance is formed in an irregular layer, raising the mucous membrane in uneven swellings, from one quarter to one half an inch in depth. The mucous membrane itself appears swollen, cedematous, spongy, and villous. External to the morbid substance is a layer, about two lines thick, of dense, grey, semitransparent tissue, traversed by fibres like those described in No. 2408. In the middle of the posterior wall of the stomach is an oval ulcer, three quarters of an inch in its longest diameter, with a sharp abrupt margin and a smooth base formed of the submucous tissue. Near the pylorus is an appearance of more diffuse ulceration. The peritoneum covering the diseased part of the stomach is healthy, very tense and thin. Some enlarged lymphatic glands are attached to the great arch of the stomach.

From a man 23 years old, who was in good health six months before his death.

Presented by Sir William Lawrence.

2412. The pyloric portion of a stomach, with part of the duodenum. The submucous tissue for about four inches above the pylorus is occupied by a thin flat mass of hard, white, obscurely fibrous, cancerous substance, on the outer surface of which, and extending through a large area, is a layer, half an inch thick, formed of dense, grey, semitransparent

substance, vertically striated as in the preceding specimens. The mucous membrane is closely adherent to the morbid substance beneath it, and its inner surface is deeply wrinkled. To the outer surface of the diseased portion of the stomach, the omentum and some condensed cellular tissue with lymphatic glands are intimately adherent. *Hunterian.*

2413. The pyloric end of a stomach affected by a cancerous ulcer. The edge of the ulcer is raised and spongy, but the floor is as smooth as that of a chronic ulcer, in which perhaps the disease originated. There is a considerable mass of growth on the peritoneal aspect of the pylorus. The stricture was so great as only to allow of the passage of water drop by drop.

From a married woman aged 56. A tumour had been noticed in the right breast for years. She looked ill and emaciated, and had lately occasionally vomited her food. The vomiting became incessant, and she rapidly sank. The mamma was also cancerous, and is preserved in the Series of Diseases of the Breast. The case is recorded in the 'Brit. and Foreign Medico-Chir. Review,' January 1875.

Presented by Charles J. Cullingworth, Esq., 1874.

2414. The pyloric portion of a stomach, with the commencement of the duodenum. An elongated narrow ulcer, with slightly elevated edges formed of swollen mucous membrane, extends half round the stomach immediately before the pylorus. The tissues subjacent to the ulcer are thickened and hard, as if occupied by such cancerous disease as is shown in the preceding specimens. The margins of the pylorus (in which a quill fits closely) are swollen, and its aperture is contracted. The muscular coat of the rest of the stomach is hypertrophied. *Presented by Sir Everard Home.*

2415. The pyloric portion of a stomach, with part of the duodenum. Immediately above the pylorus there is disease like that last described, but of less extent, in the situation of the submucous and muscular coats. Over the middle of this diseased part the mucous membrane appears hard, closely united to the morbid substance, and smooth; but

around, it is raised in a ring-shaped, flat tumour, with a spongy, radiating, fibrous texture, like many of the tumours shown in the following preparations. The coats of the stomach above the diseased part are hypertrophied.

Hunterian.

2416. A stomach of which the blood-vessels have been minutely injected. Around the cardiac orifice, and extending for a short distance along the lower curvature, is a flat, sponge-like tumour (probably either an epithelial or a medullary cancer) of moderately firm consistence, having an uneven surface projecting into the cavity of the stomach, and a deeply sinuous elevated margin. The lymphatic glands immediately adjacent to the tumour are enlarged, and contain a soft pulpy substance. The coats of the stomach on which the tumour rests, and immediately adjacent to it, appear healthy. The middle of the stomach presents a very close hour-glass contraction.

From the Museum of John Howship, Esq.

2417. The cardiac portion of a stomach, with part of the œsophagus. Immediately below and around the cardiac orifice is a thick ring of spongy cancerous substance (very like that last described), over the greater part of which the mucous membrane is roughly ulcerated. The œsophagus is dilated, and its muscular coat is very much hypertrophied.

Hunterian.

2418. The cardiac portion of a stomach, with part of the œsophagus. Around and immediately below the cardiac orifice is a tumour, irregularly nodulated on the surface, and hard to the touch. It projects so far into the cavity, and causes such an obstruction to the canal, that, before it was cut open, it was with difficulty that a probe could be passed from the œsophagus into the stomach. The mucous membrane is ulcerated at this point. A microscopical examination of this tumour showed it to be a cancer with a dense fibrous stroma. The calibre of the œsophagus above the obstruction

was much increased and its walls thickened. The inner surface of the stomach was florid and, except at the cardiac orifice, seemed healthy.

Presented by Sir Erasmus Wilson, 1858.

2419. The pyloric part of a stomach, with the first portion of the duodenum. At the pylorus, and for nearly two inches above it, the walls of the stomach are occupied by a soft, spongy, cancerous tumour, apparently composed, for the most part, of loosely connected fibres, and projecting in irregular masses into the cavity, as well as on the exterior, of the stomach. Many blood-vessels, the orifices of which are seen on the cut surface of the tumour, traverse the central and firmer parts of its substance. The wall of the stomach immediately above the tumour is thickened by the formation, between its peritoneal and mucous coats, of a firm, greyish, glistening substance traversed by branching white fibres. Just above the pylorus the wall is perforated by a ragged ulcer, which was closed by an adherent portion of the anterior part of the liver. *Hunterian.*

2420. The pyloric portion of a stomach, with the commencement of the duodenum. Above the pylorus the cavity of the stomach is nearly filled with an irregular, lobed, and fissured mass of soft sponge-like substance like medullary cancer, parts of which are deeply ulcerated. The adjacent walls are thickened, like those in the preceding specimen. The blood-vessels of the stomach are at the same part dilated, and present wide circular orifices on the surface of the section. The lymphatic glands are enlarged and closely adherent to the exterior of the pylorus. *Hunterian.*

2421. An œsophagus, with the cardiac portion of the stomach, both affected with ulcerated cancer, probably of the same kind as that shown in the two preceding specimens. The whole circumference of the œsophagus, for nearly four inches below the bifurcation of the trachea, is occupied by an irregular ulcer with a coarsely shaggy surface. At its upper

part the base of this ulcer is traversed by several bands of the thickened circular muscular fibres of the œsophagus, and in a few situations the longitudinal fibres are exposed. The margins of the ulcer are in some parts thin and undermined, as if by sloughing ; but in a few places they present spongy elevations like portions of the sinuous margins of the preceding flat, soft, cancerous tumours. Parts of the arch of the aorta, and of one of the bronchi, are firmly adherent to the exterior of the œsophagus near the ulcer. The trunks of the pneumogastric nerves are imbedded in the thickened tissue : the left nerve was ulcerated through, just after giving off the branches to the pulmonary plexus. Through its whole length the œsophagus is considerably dilated, and its muscular coat is very thick.

The ulcer in the stomach is situated just below the cardiac orifice ; the orifice itself and the portion of the œsophagus directly above it are healthy. The ulcer is round, with an elevated sinuous margin, covered with swollen, smooth, mucous membrane ; it is about three inches in diameter ; and all the central part of its surface is rough, fibrous, and flocculent, like that of the ulcer in the œsophagus. Part of the left lobe of the liver is closely adherent to the exterior of the cardiac portion of the stomach.

The patient was a man about 50 years old.

Presented by Joseph Swan, Esq.

2422. Portion of a stomach, around the cardiac orifice of which there is a large ulcer like that last described. Its base is formed of a soft spongy substance, its margins of long coarse shreds and flocculi, which hang loose in the cavity of the stomach.

Presented by Sir Everard Home.

2423. Portion of a stomach, in which the walls in a circular space of about three inches in diameter are wholly destroyed by ulceration. The aperture is partly filled with loose and nearly detached portions of a soft flocculent substance. Around it the traces of the extreme boundary of the ulceration are discernible in a slightly elevated sinuous line.

Adjacent to this ulcer is another about an inch in diameter, but irregular in its form, which has an even flocculent base.

Presented by William Norris, Esq.

2424. Portion of a stomach in which there is a large cancerous ulcer. The margin of the ulcer is deeply sinuous, hard, and elevated; it has destroyed the mucous membrane and the tissues beneath it, so that at one part the walls are nearly perforated. The base of the ulcer is nearly level and smooth, and its characters are such as indicate the probability that a process of healing had been established after the ulceration or sloughing of the centre of such a flat cancerous growth as is shown in some of the preceding specimens, as Nos. 2416 and 2418. The adjacent parts of the wall of the stomach are thickened, but the surface of its mucous membrane appears healthy.

Hunterian.

2425. The cardiac half of a stomach, with part of the œsophagus, from a woman 50 years of age. The cavity of the stomach, just below the cardiac orifice, is much contracted by the growth of several masses of a moderately firm cancerous substance within the cellular tissue between its coats. Some of these are exposed by the ulceration of the mucous membrane over them, and others project upon the peritoneal surface. In consequence of the constriction of the stomach opposite the cardia, the left or blind end appears like a small round sac, communicating with the larger cavity of the stomach by a circular orifice about an inch in diameter. The mucous membrane of the œsophagus is thickened, and its surface is coarsely granulated; the muscular coat is hypertrophied.

There were tumours of a similar kind, but softer, in the liver and omentum. Signs of organic gastric disease had existed during the last three years of life.

From the Museum of George Langstaff, Esq.

2426. The pyloric portion of a stomach, with part of the duodenum. The walls of the stomach are increased to more than half an inch in thickness by cancer. Within the coats is an accu-

mulation of a transparent jelly-like substance, of which some is contained in distinct spherical cells and the rest appears generally diffused through the tissues ; so that the section made through the walls of the stomach looks like the surface of a mass of jelly traversed by fine white fibres. The interior of the stomach is covered with long flocculi, and cells containing the jelly-like substance are thickly scattered immediately beneath its surface. Such cells exist also in equal abundance beneath the peritoneal coat, which is elevated by them into an irregularly nodulated surface.

From a lady of middle age, who died extremely emaciated after long suffering with gastric affection. The heart is preserved in No. 2964.

From the Museum of George Langstaff, Esq.

2427. A stomach opened from behind, with its cardiac end obstructed by a yellow, apparently gummatous mass in the liver. The cardiac end of the œsophagus is surrounded by the growth, and a small piece of liver is attached.

The patient, a captain in the army, died at the age of 48. Twenty years before his death he was on duty in a damp climate and his health suffered in consequence. He was then troubled with morning sickness coming-on soon after breakfast. This, his first, and for a long time his only, symptom continued with intervals of abatement to within three or four years of his death, when it became worse and followed after every meal, and eating was most irksome. For the last four months of his life he had constant sickness after fluid or solid food. He described his food as passing only halfway down the gullet and then returning. He was very emaciated, and just below the sternum a hard round mass could be detected half the size of a hen's egg. Pain at this spot became as distressing as the sickness, so much so that he begged over and over again to be poisoned, and even tried to bribe his medical attendant to put him out of his misery. For six weeks before his death no food of any kind was taken, the least attempt to swallow being "torture." He was kept alive by nutrient enemata. A microscopical examination of the mass shows a fibrous tissue and small round nuclei, a structure suggestive of the disease having been syphilitic.

Presented by Arthur Roberts, Esq., 1874.

- 2427 A. A stomach with an opening made in the operation of gastrostomy. The integuments are firmly adherent to the margins of the opening.

The operation was performed for cancer of the œsophagus. The incision was made along the left linea semilunaris, an inch from the ninth costal cartilage, yet the opening into the stomach is at a very short distance from the pyloric orifice.

Presented by Paul Swain, Esq., 1882.

- 2427 B. A portion of the abdominal integuments and of the anterior wall of a stomach with an opening made in the operation of gastrostomy. The opening is about three inches and a half below, and slightly to the right of, the cardiac orifice, into which a glass rod is passed. The surfaces of the peritoneum around it are firmly adherent.

Presented by Walter H. A. Jacobson, Esq., 1883.

- 2427 c. A portion of the skin of the back of a Sheep, with two openings leading into the rumen of the paunch, the wall of which is firmly adherent to the integuments at this part. The openings are rounded, scarcely a quarter of an inch in diameter, and are only separated by a narrow band of skin and mucous membrane; their margins are rounded and smoothly healed. They resulted from the attack of the Kea Parrot (*Nestor notabilis*). An example of fæcal fistula established by this bird is in the next Series.

Presented by H. A. de Lautour, Esq., of Oomaru, 1882.

Specimens of Diseases of the Stomach in other parts of the Museum:—

Effects of foreign bodies: 128 to 131, 133.

Ulcer: 210.

Cancer: 506, 510, 511.

Diseases of the Duodenum.

Simple Stricture.

2428. Parts of a stomach and duodenum. Immediately adjacent to the pylorus the canal of the duodenum is reduced to one-fourth of an inch in diameter by contraction with slight thickening of its walls. The stricture is half an inch in length. Behind it the pylorus and stomach are dilated, and their muscular coats are hypertrophied; beyond it the

duodenum enlarges at once to its ordinary size. The mucous membrane of both the stomach and the duodenum is healthy. *From the Museum of George Langstaff, Esq.*

Ulceration.

2429. Parts of a stomach and duodenum, exhibiting an ulcer of the duodenum which presents the characters of the perforating ulcer of the stomach. It is of nearly circular form, has abrupt margins, and is an inch in diameter. It has extended through all the coats of the intestine and exposed the pancreas, the surface of which now forms its base. The nearest margin of the ulcer is one third of an inch from the pylorus. A bristle is placed in an artery in the pancreas, which was opened in the progress of the ulcer and permitted fatal hæmorrhage.

The patient, a girl aged 15, was admitted into the London Hospital, March 16, 1844, on account of a burn, which extended over the front of the chest, left upper extremity, neck, and upper part of the back, partially destroying the true skin. The injury was not followed by much collapse, but on the following day she had an attack of fever, which continued for four or five days. On the 21st she became very weak and complained of pain from the burn, for which opium, ammonia, and wine were administered. The following day she felt better, but from that period till her death she complained at intervals of pain in the epigastric region. On the 30th she vomited a large quantity of dark tar-like fluid. From this time she sank rapidly, and expired about twelve hours afterwards, having passed in the course of the day dark matter by stool.

On the examination of the body (besides what is shown in the preparation) the heart was found flabby, with only a small quantity of blood in its cavities. The stomach contained a quantity of dark fluid, resembling that vomited during life, and in the intestines there was dark pitchy-looking matter.

The case is further reported in 'The Lancet,' June 14, 1844, p. 387.

Presented by Thomas Blizard Curling, Esq.

2430. A duodenum, showing an ulcer an inch and a half beyond the pylorus laying open the arteria pancreatico-duodenalis. It is of oblong shape with thick rather undermined edges and smooth floor. The whole thickness of the bowel is

destroyed and a rent has taken place into the peritoneal cavity close to the margin of the ulcer.

From a girl, aged 7, who was severely burnt over the greater part of the abdomen and the left thigh. Death took place eight days after with hæmorrhage from the bowel.—*Lancet*, 1866, vol. i. p. 484.

Presented by Thomas Blizard Curling, Esq.

2431. The pyloric portion of a stomach and part of the duodenum. In the latter are two ulcers, the larger immediately beyond the valve, the other an inch and a half beyond it. The floor of the larger ulcer is deeply placed and very thin, being formed of peritoneum alone ; but the edges are rounded as if healing had commenced. In the lower ulcer this is even more marked.

From a boy, aged 7; who was extensively burnt on the front and back of the body. In front the skin and subcutaneous tissue were destroyed from a little above the clavicles to within three inches of the pubes, so that when the slough separated the muscles were laid bare. The back was affected to a similar extent though less deeply. He died four weeks after the injury. He had suffered during his life from no intestinal symptoms.

Presented by Thomas Blizard Curling, Esq., 1868.

Morbid Growths.

2432. Portion of duodenum, on the interior of which are several small oval tumours composed of soft medullary substance. Some of them are ulcerated on their exposed surfaces; some appear to have sloughed and partially separated.

From a man who had similar tumours in several parts of the body. One from the axilla is preserved in No. 461.

From the Museum of George Langstaff, Esq.

Series XXIII. INJURIES AND DISEASES OF THE INTESTINE.

*(Not including the Duodenum, Rectum, Anus, and
the parts concerned in Hernia.)*

Injuries by Violence : 2433, 2434, 2435.

Foreign Bodies and their effects : 2436 to 2453.

Concretions formed by Undigested Food : 2446 to 2451.

Hypertrophy : 2453-54, 2455, 2455 A, 2521.

Dilatation : 2521, 2533.

Diverticula : 2452, 2455 B, 2455 C.

Congestion, Inflammation, and Thickening of the Mucous Membrane :
2456 to 2459.

Acute Enteritis : 2459 to 2462.

Catarrhal „ : 2463.

Intestinal Casts : 2463.

Ulceration :—

Follicular : 2464 to 2466, 2471.

Superficial : 2467-68.

Perforating and Dysenteric : 2442, 2469-70, 2472 to 2490, 2521.

Typhoid : 2492 to 2520.

„ Healed : 2507.

Syphilitic : 2491.

Tubercular : 2538 to 2548.

Perforating : 2538 to 2539, 2541 to 2543.

Cancerous : 2521 ?, 2524, 2530 to 2536.

Ulceration above Strictures : 2470, 2521, 2534.

Stricture from Ulceration : 2522.

„ „ Growths external to Bowel : 2528.

Gastro-Colic Fistula : 2531.

Obstruction from Gall-stones : 2436.

Morbid Growths : 2523 to 2537.

Polypoid Growths : 2455, 2455 A.

Lymphoma : 2523 ?

Lympho-sarcoma : 2523 A, 2523 B.

Cancer : 2521 ?, 2524, 2526 to 2527, 2529 to 2534, 2536, 2537 ?

Colloid : 2535.

Cancer producing Stricture : 2529 to 2530, 2532 to 2536.

Tubercle : 2538 to 2549.

Enterotomy : 2549 A-B.

Diseases of the Cæcum and its Appendix :—

Edema of Valve : 2550.

Simple narrowing of Valve : 2551.

Ulceration „ : 2552 ?, 2553.

Destruction of „ : 2552.

Ulceration of Appendix : 2554 to 2558.

Discoloration due to altered blood : 2458.

Discoloration due to Mercurial deposit : 2559.

Concretions formed in : 2559 A.

Injuries by Violence.

2433. A portion of jejunum, in which are four apertures made by a bullet twenty-four hours before death. Coagulated lymph is deposited in thin films upon the peritoneum around the wounds. *Hunterian.*

2434. Another portion of the same jejunum. The edges of one of the apertures made by the bullet are thickened and everted, and there is lymph upon them and the surrounding peritoneum. *Hunterian.*

Mr. Hunter adduces these parts in proof that adhesions may form very quickly around gun-shot wounds of the intestines. He says :—“ On Thursday morning, the 4th of September, 1783, about seven o'clock, an officer fought a duel in the Ring in Hyde Park, in which he exchanged three shots with his antagonist, whose last shot struck him on the right side, just below the last rib, and appeared under the skin on the opposite side, exactly in the corresponding place, and was immediately cut out by Mr. Grant.

“ About three hours after receiving this wound I saw him with Mr. Grant. He was pretty quiet, not in much pain, rather low, pulse not quick nor full, and a sleepy languidness in the eye, which made me suspect something more than a common wound. He then had neither had a stool nor made water, and therefore it could not be said what viscera might be wounded.

“ During all the day he had frequent vomiting, and tension of the abdomen; but he had no stool, although two clysters were given. He died at seven o'clock the following morning, about twenty-four hours after receiving the wound.

“ He was opened next day at ten o'clock, twenty-seven hours after death, when we found the body considerably putrid, although the weather was cold for the season, the blood having transuded all over the face, neck, shoulders, and breast, with a bloody fluid coming out of his mouth, with an offensive smell; below this the body was not so far gone.

“ In opening the abdomen a good deal of putrid air rushed out

then we observed a good deal of fluid blood, principally on each side of the abdomen, with some coagulum upon the intestines; when sponged up it might be about a quart. The small intestines were slightly inflamed in many places, and these adhered.

“On searching for the course of the ball we found that it had passed directly in, pierced the peritoneum, entered again the peritoneum where it attaches the colon to the loins, passed behind the ascending colon, and just appeared at the right side of the root of the mesentery where the colon is attached; passed behind the root of the mesentery, and entered the lower turn of the duodenum as it crosses the spine; then passed out of that gut on the left of the mesentery, and in its course to the left side it went through the jejunum about a foot from its beginning; then through between two folds of the lower part of the jejunum, taking a piece out of each; then passed before the descending part of the colon, and pierced the peritoneum of the left side, as also some of the muscles, but not the skin, and was immediately cut out exactly in the same place on the left where it entered on the right; so it must have passed perfectly in a horizontal direction.

“There was no appearance of extravasation of any of the contents of the intestines loose in the cavity of the abdomen. The intestines, in many places, were adhering to one another, especially near to the wounds, which adhesions were recent, and, of course, very slight; yet they showed a ready disposition for union to prevent the secondary symptoms or what may be called the consequent, which would also have proved fatal.

“There was little or no fluid in the small intestines, but there was a good deal of substance, in consistence like fæces, in broken pieces about the size of a nut, through the whole track of the intestine, even in the stomach, which he vomited up; but in the upper end of the jejunum, as also in the duodenum, there was some fluid mixed with the other; but that fluid seemed to be rather bile. If this solid part was excrement, then the valve of the colon must not have done its duty. Was all the thin part absorbed to hinder extravasation into the belly? or was it all brought back into the stomach to be vomited up? There was a good deal of air in the ascending, but more especially in the transverse, turn of the colon.

“This case admits of several observations and queries. First, the lowness and gradual sinking, with the vomiting without blood, bespoke wounded intestines, and those pretty high up. It shows how ready Nature is to secure all unnatural passages, according to the necessity.

“Query, what could be cause of his having no stool, even from the clyster? Were the intestines inclinable to be quiet under such circumstances? Would he not have lived if the immediate mischief had not been too much? I think that if the immediate cause of death had not been so violent, Nature would have secured the parts from the secondary, viz. the extravasation of the fæces.

“What is the best practice where it is supposed an intestine may be wounded? I should suppose the very best practice would

be to be quiet, and do nothing, except bleeding, which in cases of wounded intestines is seldom necessary."—*Hunter: On the Blood, &c.; Works*, vol. iii. pp. 561–4.

2435. A portion of jejunum, the coats of which were ruptured by a blow. The aperture is transverse and oval, measuring about a quarter of an inch in its greatest diameter. The edges of the ruptured mucous membrane are protruded through the aperture in the peritoneal coat, and everted, so as to form a deep border round its margin by which the apparent extent of the aperture is considerably lessened. The adjacent peritoneal coat is thinly covered by lymph.

From a man 70 years old, who was kicked by a horse just above the umbilicus twenty-one hours before death. After death there was found "a large quantity of bloody serum in the abdomen, but very little fæculent matter had escaped." On two other portions of the intestine there were small ecchymoses.

The case is described by Mr. Swan in the 'Edinburgh Medical and Surgical Journal,' vol. xxii. p. 93 (July 1824).

Presented by Joseph Swan, Esq.

Foreign Bodies and their Effects.

2436. Portion of ileum, in which a biliary calculus, of regular oval form, measuring two inches in length and an inch and a quarter in thickness, and weighing four hundred grains, is firmly impacted. The intestine appears healthy.

The patient was a woman 52 years old. She had long suffered with signs of biliary calculi, and died exhausted. After death the gall-bladder was found thickened and contracted; and both it and the liver were intimately adherent to the duodenum and other adjacent organs. There was a large ulcerated opening of communication between the gall-bladder and duodenum, through which this calculus had passed. The intestine above the part in which it was impacted was distended with air and bilious fluid.

From the Museum of John Howship, Esq.

2437. Portion of the colon of a Horse, which has several small brown calculi imbedded in ulcerated (?) cavities in its mucous membrane.

Hunterian.

2438. The end of an ileum, with the cæcum, and a dessert-spoon which became fixed in the latter. The spoon is seven inches long, and its bowl measures one inch and a half across. Its surface is nearly all blackened, but its form is not changed. The mucous membrane of the cæcum and colon is in many places in a state of ragged ulceration, but in the intervening spaces is unaltered; and all the other tissues of the intestine appear healthy.

The patient was a lunatic, 22 years old, who, after making two ineffectual attempts at suicide, forced this spoon down his throat in the absence of his keeper. No immediate ill effects followed, and it was not till he had in a great measure recovered from his insanity, and confessed what he had done, that the fate of the missing spoon was suspected. After this, however, his digestive organs began to be much disordered, his health declined, he often complained of an acute pain in the region of the cæcum, and his evacuations were sometimes mixed with pus and blood. He underwent various treatment; for his account of having swallowed a spoon was ascribed by his medical attendants to a disordered imagination. At length signs of disease of the liver, with ascites and dyspnoea, ensued. He was tapped, and when the fluid was evacuated Mr. Langstaff distinctly felt a solid substance through the emaciated walls of the abdomen. A month afterwards he died. For a short time previous to his death his urine and fæces were passed involuntarily.

The case is published at greater length in 'The Catalogue of the Preparations constituting the Anatomical Museum of George Langstaff,' London, 1842, 8vo, p. 228. It includes the following letter, found after the patient's death:—

"To my dear Mother.

"In the event of my death let me be opened soon after by medical men, any you may wish, but I wish Mr. Langstaff to be present and, if he pleases, to operate.

"The spoon will be found in my intestines. I have given it to my mother, but she is at liberty to dispose of it in any way, or to whom, she may think proper: if the possession of it is desirable to any of the faculty for the public good, scruple not to communicate it, or publish any of the facts or circumstances relative to the above matter, if the knowledge of them will benefit the community.

"I forced the spoon down my throat with my right hand, immediately after dinner, while in my room at Mr. Terry's, of Sutton Coldfield, about the beginning of October 1827, and remember the detail of the whole affair. Let there be two members of my immediate family present during the work of dissection."

From the Museum of George Langstaff, Esq.

2439. An egg-cup found impacted within the ileum.

From a man 60 years of age, an inmate of Christ Church Work-house, whose mental faculties were impaired. He had had an inguinal hernia for thirty-five years, which was reducible but had been much neglected. He suffered from what was regarded as dysentery for ten weeks before admission, and was admitted for symptoms of obstruction. The hernia was tense, but, taxis having reduced all but a very small knot of the tumour, the persistence of the symptoms left little doubt of the existence of internal strangulation. The man refused any operation, and died in three days. The small intestine was matted together, many parts of the coats being diaphanous; the ileum was of a purple-crimson colour and ulcerated in patches; and two inches above a knuckle of intestine strangulated by the neck of the hernial sac was the egg-cup, closely impacted in the ileum, with its mouth downwards and resting on the spine, and the broken stem projecting through the bowel near the left crista ilii.

[Not the slightest intimation of what he had done had ever been given by the patient.]

The case is recorded in a pamphlet entitled "Wonders displayed in the Human Body in the Endurance of Injury" (Renshaw, 1848), and in the 'Lancet,' 1834, p. 675.

Presented by William C. Dendy, Esq., 1868.

2440. A vulcanite tooth-plate, containing two teeth, and from one extremity of which a sharp gold hook projects.

It was swallowed by a young girl after a fit of coughing, and passed *per anum* forty-two hours afterwards without having occasioned the slightest inconvenience.

A full account of the case is in the 'Lancet,' Dec. 10, 1881.

Presented by Francis C. Palmer, Esq., 1882.

2441. A number of dominoes, pebbles, glass, and pieces of tobacco-pipe, swallowed by an insane patient and passed *per anum*.

Presented by Dr. Thurnam, 1871.

2442. A cæcum, with part of the ascending colon, in which numerous ulcers, of various sizes and shapes, have destroyed portions of the mucous membrane and burrowed more widely under it, leaving strips and islands of it unaffected. The other coats of the intestine are thickened and indurated,

and there are numerous enlarged lymphatic glands in the adjacent part of the mesocolon.

The patient, a boy 12 years old, had suffered for sixteen months before death with severe pain in the abdomen, especially in its right side. At first it used to occur about once a-week, coming on suddenly when he appeared in good health, and occasioning by its severity nausea and sometimes vomiting. Gradually, however, the attacks of pain grew more frequent; and at length it became constant, and vomiting almost always followed the taking of food. Three months before death the abdomen was much enlarged and irregularly hard; there was constant pain in the right iliac region, accompanied with flatulent distension in the course of the colon, and constant vomiting after the taking of food. The patient's condition was for a time improved by the use of purgatives, but he became very emaciated and gradually sank.

In the examination after death about three quarts of serous fluid were found in the cavity of the abdomen. The viscera, with the exception of the intestinal canal, appeared healthy. The end of the ileum and the cæcum, with their walls thickened and indurated, were firmly adherent to the iliac fossa, and their calibre was diminished to less than half an inch in diameter. Imbedded in the ulcers of the cæcum were five cherry- and damson-stones, a piece of hard wood, and the half of a small button; and six or seven similar fruit-stones were found loose in the neighbouring part of the intestine.

Presented by J. M'Donnell, Esq.

2443. Some of the cherry- and plum-stones, with a raisin-stone, and a small piece of wood, from the cæcum last described.

2444. A glass drop of a lustre, swallowed by a boy 6 years of age, and passed *per anum* fifty-two hours afterwards.

Presented by J. F. Streeter, Esq.

2445. Numerous plum- and cherry-stones, which were voided from the intestines of a boy 11 years old, through an external abscess. *From the Museum of John Hearside, Esq.*

2446 to 2451. A series of preparations of animal tissues, consisting of arteries, veins, fasciæ, and in some instances nodules of fat entangled in areolar tissue. They were

taken in food, and passed in an undigested state along the intestines, and caused fæcal accumulations.

"All the patients who voided these substances were, as far as could be ascertained, dyspeptic; and the usual meat diet prescribed by the medical attendants was mutton in the form of chops." (*Vide* Quain on 'Diseases of the Rectum,' 2nd ed. p. 318.)

Presented by John Quekett, Esq.

2452. A diverticulum in the lower part of the jejunum, perforated and containing a pea.

From a boy 4 years old, who died with symptoms of acute obstruction, which had commenced a few days before death, shortly after he had eaten a hearty dinner. On *post-mortem* examination the intestine was found obstructed immediately below the diverticulum by a narrowing of its calibre. Flatus and fæces had passed into the peritoneum.

The case is reported in the Pathological Society's Transactions, vol. xxix.

Presented by Edward E. Hacon, Esq.

Hypertrophy.

2453. Portion of ileum, in which the Peyer's and solitary glands are very large; some of the latter are elevated upon short narrow pedicles. The villi are very long and turgid; but neither they nor the glands exhibit any morbid change of structure. "An appearance like inflamed glands. I once saw the same appearance before."—*Hunterian MS. Catalogue.*

2454. Portion of ileum, inverted, in which there is a very large and prominent patch of Peyer's glands. The follicles are well seen beneath the surface of the mucous membrane. The solitary glands, also, are large, and project far beyond the surrounding surface of the membrane. The villi are long and turgid.

Probably both this and the preceding specimen exhibit only the healthy aspect of these parts during the active discharge of their several functions.

Hunterian.

2455. A portion of the descending colon the mucous membrane of which is covered by pendulous polypoid projections, arranged, for the most part, in lines corresponding to the transverse folds of the intestine. They were found on examination with the microscope to consist entirely of myxomatous connective tissue. The intestine showed this condition for twelve or more inches above a stricture of the rectum.

Presented by Frederic S. Eve, Esq., 1881.

- 2455 A. A portion of a colon with extreme thickening of the mucous membrane, which projects in prominent transverse ridges and sessile and pedunculated polypus-like masses. The mucous membrane covering some of the ridges and polypi is superficially ulcerated.

From a man aged 49, upon whom colotomy was performed for the relief of severe pain in the rectum with passage of blood and mucus, which had existed for six months. He suffered unusually from pain after the operation, but improved in other respects, the motions becoming nearly solid. He died exhausted. His other viscera were healthy.

Presented by Dr. J. F. Goodhart, 1883.

Dilatations.

- 2455 B. A portion of ileum, in which there are, in two places, partial dilatations of the mucous and peritoneal coats, forming large sacculi or *false diverticula*. The dilatations are situated close to the attachment of the mesentery; one of them is nearly hemispherical, the other superficially lobed. They appear to have been produced by a kind of hernial distension and protrusion of the mucous membrane through the muscular and beneath the peritoneal coat. There were several other dilatations of the same kind on the small intestine, and the whole canal was much distended with air.

The pouches seen in this and in the following preparation have been called "distension diverticula," because they are prone to occur when from any long persistent cause the intestinal canal has been over-distended.

From the Museum of George Langstaff, Esq.

- 2455 c. A portion of small intestine with sacculations of various sizes projecting from it along its mesenteric attachment; the walls of the sacculations are composed entirely of mucous membrane.

The specimen was taken from a boy who died of septicæmia; no other abnormal condition of the intestine was found.

Presented by Marcus Beck, Esq., 1881.

Congestion, Inflammation, and Thickening of the Mucous Membrane.

2456. Portion of ileum, in the mucous membrane of which the blood-vessels were intensely congested, giving it a uniform deep-red colour. It appears also to have been thickly covered with mucus, which is coagulated and made flocculent by the alcohol. The villi are very large. The mesentery and peritoneum have been deeply stained with blood during the preparation of the specimen.

From a patient who had hæmorrhage from the intestines.

From the Museum of George Langstaff, Esq.

2457. Portions of ileum, the vessels of which were intensely congested with blood, giving its mucous membrane a uniform red colour. The textures appear in other respects healthy.

From a woman who died a few hours after being extensively scalded over the chest and abdomen. There had been profuse hæmorrhage from the intestines.

From the Museum of George Langstaff, Esq.

2458. A cæcum, with a portion of colon, in which, probably in consequence of long-continued congestion, the surface of the mucous membrane is finely mottled with black, grey, and white, so that at a distance it appears of a deep iron-grey colour. The membrane is not altered in its apparent structure, nor does the change of colour extend into the ileum.

From a woman 60 years old, who had long suffered with chronic peritonitis and disease of the uterus.

From the Museum of George Langstaff, Esq.

N.B.—This specimen should be compared with No. 2559, in which the appearances are very similar, but due to other causes.

- 2459.** A portion of the ileum of an Ass, in which the vessels of the mucous membrane are greatly congested. Small flakes of lymph are loosely attached to the surfaces of both the mucous and the peritoneal coats.

Other portions of the same intestine are preserved in Nos. 153 to 156: and Mr. Hunter's description is added to the account of them in vol. i. pp. 63–64.

Hunterian.

- 2460.** Portion of jejunum, the coats of which are much thickened and appear consolidated. A considerable deposit, hanging in loose shreds, is attached to the surface of the mucous membrane.

The patient died with the cancer of the stomach preserved in No. 510. About eighteen inches of the intestine were in the same state as this.

Hunterian.

- 2460 A.** A portion of small intestine affected with acute enteritis. The mucous membrane is deeply congested and has a velvety appearance from the prominence of the swollen villi.

From a lady aged 77, who died after symptoms of enteritis.

Presented by Dr. Brinton, 1865.

- 2460 B.** Two portions of small intestine which have been acutely inflamed. In one portion the mucous membrane is much swollen, granular, apparently covered with lymph and studded with small patches of ulceration; in the other, the mucous membrane has been almost entirely destroyed by sloughing and ulceration, and the fibres of the muscular coat are exposed.

From a woman aged 54, who was admitted into Guy's Hospital with abdominal pain, sickness, and the general appearances of peritonitis. Her symptoms suddenly became aggravated, and she died in collapse. The illness began five weeks previously with griping pains, constipation, and occasional sickness.

The autopsy showed peritonitis and an excessive amount of ulceration of the bowel, of which the mucous membrane was almost gangrenous at the lower part of the ileum.

Presented by Dr. J. F. Goodhart, 1883.

2461. Two portions of colon, the coats of which are thickened and indurated. The surface of the mucous membrane is unusually wrinkled and granulated. *Hunterian.*

2462. The lower part of a colon and rectum, everted. The mucous surface is much thickened and covered with flakes of coagulated lymph.

From a man who had suffered with the ordinary symptoms of dysentery, although no deep ulcerations were found in the large intestines after death. He had passed large flakes of lymph, pus, and some blood.

Presented by Dr. S. J. Goodfellow.

2463. Portions of coagulated mucus passed *per anum*, probably from some part of the large intestine. It forms opaque masses of a rugose and flocculent appearance, and there are perfect casts of the crypts upon the surface, and occasionally of the entire length of an intestinal follicle. The masses are extremely fragile, and present no trace of any organized structure.

From a woman 47 years of age. She had noticed the passage of similar material for four years, though at its first appearance it was more gelatinous. She was a weakly married woman, subject to irregularity of the bowels, and she suffered much from flatulence and abdominal pain. The onset of the illness was attributed to "low fever." Eleven years after passing the mucus here shown she was alive and in her usual somewhat feeble health, and still continued to pass casts of similar nature. The case is recorded in the Transactions of the Pathological Society, vol. xxiii. p. 98.

Presented by Edward Berry, Esq., 1871.

Ulceration.

2464. An inverted cæcum, in which are several minute ulcers of the mucous membrane, very like the small hæmorrhagic ulcers of the stomach shown in No. 2393. They are of various shapes ; some oval, some strip-like, some with irregular outlines. Some are quite superficial, but some extend through the whole thickness of the membrane, and have smooth, abrupt, not overhanging margins : their bases are level, and formed apparently by healthy tissue. The tissues adjacent to them also appear healthy. *Hunterian.*
2465. A cæcum, with parts of the ascending colon and of the ileum. In the mucous membrane of the cæcum and colon there are several small ulcers, of various shape, with sharp abrupt edges and smooth bases, very like those last described but larger. The mucous membrane of the ileum is healthy. *Hunterian.*
2466. A portion of the colon of a Lion, the blood-vessels of which have been injected. All its coats are thickened, and there are several small circular superficial ulcers of the mucous membrane. *Hunterian.*
2467. Portion of ileum, in which there has been extensive superficial ulceration of the mucous membrane. The ulcerated parts may be distinguished in irregular strips and patches of a whiter colour than the intervening portions of the membrane, and smoother, from the absence of villi. The ulceration has chiefly affected the membrane intermediate between the collections of aggregated glands, and some of the latter, as well as some of the solitary glands, are completely insulated by it. The intervening and adjacent tissues appear healthy. *Hunterian.*
2468. Portion of jejunum, in which parts of the free borders of many of the valvulæ conniventes have been irregularly and

superficially ulcerated, as if corroded or gnawed. The principal ulcerations are situated immediately beneath the attachment of the mesentery.

From a man who had medullary and melanotic disease in several parts of his body.

The case is related in the 'Medico-Chirurgical Transactions,' vol. iii. p. 277 (London, 1812), and an abstract of it is added to the description of No. 461, in vol. i. p. 172.

From the Museum of George Langstaff, Esq.

2469. Portion of ileum, in which there is a small oval perforating ulcer. The aperture in the mucous membrane is much larger than that in the peritoneum; both are oval, and their long axes are placed at right angles to one another. The margin of the ulcer is in both coats definite and sharp; the base gradually shelves towards the aperture in the peritoneal coat. The adjacent tissues appear healthy.

Hunterian.

2470. A portion of ileum laid open at its mesenteric attachment. Upon its inner surface, opposite the mesentery, are several ulcers which have perforated the coats of the intestine; they are of irregular shape and, from the appearance presented by the inner coat, commenced as numerous small ulcers, which coalesced to form apertures in the mucous membrane with slightly thickened edges, and bases formed in great part by muscular fibre. The ulceration has extended through the muscular and peritoneal coats in several places. The intestine is dilated.

From a patient upon whom ovariectomy had been performed, and who died from intestinal obstruction. (See Trans. Path. Soc. vol. xxx. p. 298.)

Presented by Dr. Granville Bantock, 1879.

2471. Portion of colon, in the mucous membrane of which there are numerous round and oval ulcers, from one to three lines in diameter. The long axes of the oval ulcers are placed transversely to the axis of the intestine; their margins are thin, clean, and regularly defined, and in several instances project over their bases, which are gene-

rally more widely ulcerated, and are like the cavities of small, cup-shaped, open abscesses in the submucous tissue. The bases of some of the ulcers appear granular and are covered with secretion. The intervening portions of the mucous membrane and the other adjacent tissues appear healthy.

The following account of the examination of the patient from whom this specimen was taken is from the Hunterian MSS. :—

“The appearances upon opening the body of the Right Honourable the Earl of Bristol.

“On opening the chest, the cartilages of the ribs were found ossified.

“The first thing that presented itself was more fat than common upon the pericardium. Upon opening this membrane, I found that it adhered everywhere to the heart. The heart was so remarkably small that I could not help wondering at it; but it was sound in its substance. Was this owing to the pericardium’s adhering to it? The diaphragm was remarkably high, so as to make the chest very short between the upper and lower part; yet the lungs were perfectly sound, and free from adhesions.

“The liver was small, and much more in the right side than common: so much so, that the gall-bladder was quite in the right side, and the ligamentum rotundum almost in the right. Some adhesions to the diaphragm, of old standing, on the upper surface, but on the whole pretty sound. The gall-bladder was very small, containing no bile, but a transparent slimy mucus. A small gall-stone lay in the beginning of its duct, which obstructed the passage of the bile into it. This would hint as if the gall-bladder did not secrete bile.

“The hepatic ducts and ductus communis were perfectly free, and the bile in them was of a light yellow colour.

“The stomach contained a dark-coloured liquor which was continued through the whole of the small intestines, but rather becoming yellower towards the last. The stomach did not appear unsound.

“The duodenum, jejunum, and most part of the ileum were sound, but the ileum towards the last was a little ulcerated. The colon and rectum on their inner membrane were ulcerated in a great number of places, through their whole lengths: and in some of those ulcerations there were evidently streaks of blood. They contained some yellow fæces, with a great deal of slimy mucus. The pancreas was sound. The bladder was sound.

“The external appearance of the stomach and intestines was rather darker than common; in other respects they appeared very sound. The darkness of the colour of the contents of these canals was most probably owing to an extravasation of blood in the stomach, although I could not observe from whence it came. But

I believe it may be remarked in general that a small extravasation of blood in the stomach soon loses the bloody tinge, and becomes livid.

“When this inky-coloured coffee was diluted it did not give the least tinge of blood or bile; therefore, if it was either the one or the other, it had then lost these qualities by the power of the stomach. If it was the bile there was no reason to suppose it to be of this kind when secreted, as the bile in the ducts was yellow, or of a natural colour: and what is next to a proof of this, the *fæces* gave the yellow tinge when diluted, which they would not have done if this in the stomach had been the bile.

“He had been long affected with the gout before his death, and of which he died. He had frequent vomitings of this black fluid, which was called black bile; he had also a purging with blood. At last he had hiccough and died.”—*Hunterian MS.: Dissections of Morbid Bodies*, No. 174.

2472. Portion of colon, from a woman who died with chronic dysentery at the Penitentiary in Millbank. The mucous membrane is extensively ulcerated, portions of it of various size having been completely removed. The primary form of the ulcers is shown in a few which still retain it, and which are circular or oval, a line or two lines in diameter, deep, with regular abrupt margins, and more widely excavated in the submucous tissue, like the follicular ulcers of the large intestine shown in No. 2471, from which, however, they differ in their edges being thicker and more swollen. But in most parts the ulcers are much larger and of irregular shape, as if formed by the coalescing of many like those of the smaller size. The submucous tissue beneath and between the ulcers is thickened, œdematous, and indurated; the greater part of the surface of the remaining mucous membrane is grey, and appears irregularly swollen.

Presented by Dr. Baly.

2473. Part of the colon and rectum affected by dysenteric ulceration. The bowel was healthy as far as the middle of the transverse colon. Below this the mucous membrane is ulcerated, and in parts covered with a thin layer of dark vascular lymph. Some of the intervening parts have the appearance of scars, the surface being smooth, unlike mucous membrane. At the lower part the mucous mem-

brane is almost entirely destroyed, islets only being left; and between them the muscular coat is exposed and bare and perforation has occurred in two places. There is no marked thickening of the coats of the bowel.

From a man aged 38, in whom symptoms of disease in the lower bowel had existed for some time. He passed much blood and mucus, and was supposed to have stricture of the rectum before he was admitted to the hospital. He had never had syphilis and had never been abroad.

The liver was fatty, but there was no other disease.

Presented by Dr. Goodhart, 1875.

2474. Portion of colon, from a patient who died with dysentery.

The mucous membrane is swollen, and there are very numerous, minute, circular and oval, deep ulcers in it, like those described in 2471. Like them, also, many have coalesced, so as to form irregular strips and patches of ulceration. The tissue bounding the ulcers is not indurated or more changed than that intervening between them.

From the Museum of George Langstaff, Esq.

2475. Portion of colon, in which, probably during dysentery, the mucous membrane was extensively ulcerated. The ulcers are for the most part isolated, and of round or oval form; they extend through the whole thickness of the mucous membrane, and have smooth bases and abrupt thick edges. They are very numerous, and in some situations several of them have coalesced, so as to insulate small patches and tracts of the swollen and granular-looking mucous membrane. The walls of the intestine are much thickened, and its canal is bent from its usual course by the adhesion of the peritoneal surfaces of two contiguous portions. *Hunterian.*

2476. Portion of rectum, from a lady who had (probably chronic) dysentery, showing a more advanced stage of the process displayed in the preceding specimens of dysenteric ulceration. There are numerous large ulcers of the mucous membrane, irregular in form and size, and a few oval, deep, small ulcers, such as are shown in the preceding specimens. The

remaining portions of the mucous membrane are almost insulated by the ulceration spread round them. The sub-mucous tissue is still more extensively ulcerated, and in several parts (indicated by bristles) has been removed from beneath long strips of the mucous membrane, which thus appear like bridges connecting the few and small remaining portions of the membrane. The fat around the rectum appears indurated, and consolidated with the coats of the intestine. *Hunterian.*

2477. Portion of a colon, of which the mucous membrane is covered with large ulcers, probably of dysenteric origin. Some are oval, but others of irregular shape, being formed by the coalescence of smaller ones. The margins of the ulcerated surfaces are fringed with long loose shreds of sloughing membrane, and their bases are ragged and in some places contain dark spots, probably of extravasated blood.

From a seaman 33 years of age, who was invalided from the East Indies. The post-mortem examination showed most of the remaining viscera to be in a normal condition.

Presented by Sir Stephen L. Hammick.

2478. Portion of colon, of which, probably during acute dysentery, nearly the whole of the mucous membrane has been removed by ulceration and sloughing. What remains is rough and ash-coloured, spotted here and there with blackened follicles; its margins hang in loose long shreds in the cavity of the intestine. The bases of the ulcers are, for the most part, smooth, formed by the exposed sub-mucous and circular muscular coats. Their outlines are irregular, but of those in which any direction can be discerned the long axes are transverse to the axis of the intestine; many of the ulcers extend nearly round the canal.

Presented by Sir William Blizard.

2479. A cæcum, with the ascending colon and part of the ileum, inverted; probably from the same patient as the

specimen last described. They are similarly diseased, but, except that its coats appear to have been too vascular and swollen, the ileum is healthy.

Presented by Sir William Blizard.

2480. A cæcum, with the end of the ileum and part of the colon. In one part of the colon the mucous membrane lining its whole circumference and between three and four inches of its length has been destroyed by ulceration and sloughing. The ulcerated surface is very irregular, but not apparently indurated; in some parts it is flocculent, in others covered with shreds of the mucous and submucous tissue; and in others the circular fibres of the muscular coat are exposed. The same surface presents groups of a kind of polypous growths, formed apparently by the increase of portions of the mucous membrane which were not ulcerated; and there are more numerous similar growths about the borders of the ulceration. There is another ulcer of smaller size, but with the same general character and similar polypous growths, in the cæcum. The ileum is healthy.

The patient is said to have died of phthisis; but there can be little doubt that this ulceration occurred in dysentery.

From the Museum of George Langstaff, Esq.

2481. A portion of the colon of a Lion. The greater part of the mucous membrane is destroyed by ulceration, like that of acute dysentery, and long shreds hang loosely from the exposed surface. *Hunterian.*

2482. Part of a large intestine and rectum, in which are several large irregularly shaped, but chiefly transverse, healing ulcers of the mucous membrane. The bases of the ulcers are uneven and very coarsely granulated; they do not appear thickened or indurated. Their margins are irregular, and overhung by the borders of the adjacent healthy

mucous membrane, which in every part projects one or two lines over the ulceration of the submucous tissue.

From a man who for several months had chronic dysentery.

From the Museum of George Langstaff, Esq.

2483. A portion of large intestine from the cæcum downwards, the mucous membrane of which is minutely mammillated and covered with small superficial ulcers. The ulcers are most of them superficial, some of them mere erosions; the larger ones have slight thickening of their edges, and all have a granular-looking edge. They become more numerous from above downwards along the canal.

In the fresh state the mucous membrane was of a bright rosy pink colour; the submucous tissue appeared thickened; and the lower part of the colon was contracted in calibre.

From a Mahomedan aged 30, admitted into the Medical College Hospital, Calcutta, with acute dysentery of about ten days' duration.

Presented by Sir Joseph Fayrer.

2484. A portion of large intestine, with its mucous membrane partially discoloured by blood-stains and covered with numerous serpiginous ulcers. In some parts the surface is covered by a pellicle of membrane, and in others the mucous membrane has undergone a sloughing process and is partially detached.

The ulcers were most abundant in the cæcum, ascending colon, sigmoid flexure, and rectum. The mucous membrane was of a bright rosy pink colour in the fresh state; and the submucous tissue was thickened.

From a male Hindu, aged 30, who died on the 11th day of an attack of acute dysentery. He was in a very broken-down state of health from secondary syphilis, and had recently undergone mercurial salivation. The stools were ten to twelve in the twenty-four hours, and contained an abundance of gelatinous pink mucus.

Presented by Sir Joseph Fayrer.

2485. A portion of large intestine from the cæcum downwards, presenting some of the appearances seen in No. 2483; but the disease is more advanced. The mucous membrane is covered by large shreddy ulcers, mostly transverse in

direction, with ill-defined margins wanting in thickening ; their bases are formed by the muscular coat of the bowel. The bowel is thickened.

The whole gut was diseased, and the margins of the ulcers in the fresh state were vividly pink. From a Mahomedan.

Presented by Sir Joseph Fayrer.

2486. A portion of large intestine from the cæcum downwards, with the mucous membrane covered by large ulcers. At the upper part these are irregular, with eroded, unthickened, granular margins and granular, fibrinous, and flocculent fibro-cellular material covering the surfaces. At the lower part of the gut the ulcers become cleaner on their surfaces, more defined and thicker at their edges, and the transverse muscular fibres of the bowel are seen in the floor of each. About four inches from the lower end of the specimen is a transverse perforation in the centre of one of the ulcers. From the somewhat different appearances seen in the upper and lower part, it is probable that the disease below is of longer duration than that above.

Presented by Sir Joseph Fayrer.

2487. A portion of large intestine from the cæcum downwards, with its mucous surface much ulcerated and diseased. The ulcers are in various stages. In most of them the edges are swollen and granular, the surfaces obscured by flocculent shreds of tissue. But in some places the mucous membrane is hanging detached and but little altered, while at others it is much swollen and altogether changed from its natural condition into a yellow granular or spongy substance, which has a strong resemblance to many of the sloughs of Peyer's patches seen in typhoid fever.

Presented by Sir Joseph Fayrer.

2488. Part of a large intestine from the cæcum downwards, showing the appearances characteristic of chronic dysentery. The upper part of the intestine is thin and atrophied, with an occasional shallow erosion or partially healed ulcer. Below this the mucous surface becomes abnormally rugose and

mammillated, with deep ulcers, the edges of which are thick and rigid. And in the lower part the surface is puckered in all directions by pale white cicatrices encircling small circular ulcers, which give evidence of their standing by their smooth and rounded edges. There are also, in some parts of the specimen, ulcerations which have a more shreddy appearance, and which appear to indicate that both acute and chronic disease were in progress.

Presented by Sir Joseph Fayrer.

2489. A portion of large intestine, the mucous membrane of which is covered with ulcers having a shreddy surface and margins, which in many parts are so ill-defined that it is difficult to distinguish the ulcerated from the non-ulcerated surface. At the lower part the whole mucous membrane is in a state of sphacelus, with flocculent shreds of tissue floating from its surface.

From a Hindoo male, aged 30, admitted to the Medical College, Calcutta, for dysentery of eight days' duration. The stools were numerous, contained much blood and blood-tinged mucus, and latterly small bits of dark slough.

Presented by Sir Joseph Fayrer.

2490. A tubular slough, about nine inches in length, from the ascending colon. It consists of the mucous membrane of the bowel with a considerable amount of the muscular coat, which can be seen as transverse ridges running round the specimen.

From a male Indian patient, aged 24, who died of dysentery and multiple abscess of the liver.

Presented by Sir Joseph Fayrer.

2491. A portion of a colon, exhibiting on its mucous surface several ulcers of syphilitic origin. They are of regular round or oval shape, from $\frac{1}{6}$ to $\frac{2}{3}$ of an inch in diameter, with clean, sharply-cut, scarcely thickened edges, surrounded by healthy mucous membrane. Their bases are for the most part level, flat, or with low granulations resting on sub-mucous tissue, nowhere penetrating to the muscular coat, with no marked subjacent thickening or hardening. On

some of them are ramifying blood-vessels ; on some few there is at the centre of the base a small island of mucous membrane, giving to the ulcer an evident likeness to the annular syphilitic ulcers of the skin ; at some places two such ulcers have coalesced, and by such coalescence the lower ulcers communicate with those in the rectum, making it probable that those in the rectum were originally of similar nature, though now superadded thickening and partial scarring have destroyed their original characteristics. The ulcers of the colon are placed without plan or grouping. In the cæcum there are none ; in the ileum only one, very small, and of rather doubtful character. They may be distinguished from tubercular ulcers in that they are limited to the large intestine and decrease in size and number from the rectum upwards. Moreover, there is no trace of softening tubercular deposit in the other tissue of the intestine ; and in shape and other characters these ulcers are unlike those of intestinal tuberculosis.

From a woman, aged 28, who seven years before her death had syphilis with a scaly cutaneous eruption. Three years after, a large sore formed near the anus, and this was followed by stricture of the rectum. She had various other sequels of syphilis, and ultimately died of phthisis pulmonalis.

The lungs presented the usual appearances of pulmonary tuberculosis, and no syphilitic disease was found in the other viscera.

Presented by Sir James Paget, 1865.

2492. The lower end of an ileum, with part of a cæcum and its appendix, from a woman who died with typhoid fever. The mucous membrane, generally, is swollen and brownish grey. The Peyer's patches and several solitary glands are exceedingly developed. Elevated, broad, convex, and rather overhanging borders of mucous membrane surround the patches, which have also narrow ridges traversing them, and forming partitions and a coarse network between the cavities from which the sloughs have been discharged. The villi on these borders and ridges are greatly developed, even rather more than those on other parts of the mucous membrane. At the centres of several of the patches there are large, partially separated, shapeless, firm, and flocculent sloughs,

in which the whole thickness of the mucous membrane is included. There are some smaller sloughs of the same kind in the enlarged solitary glands ; and in some of the patches the submucous tissue, apparently not much diseased, is exposed by the separation of the sloughs. The mesenteric glands near the ileo-cæcal valve are enlarged. In the cæcum and its appendix the disease has not proceeded beyond enlargement of the glands.

From the Museum of George Langstaff, Esq.

2493. The lower part of an ileum, the cæcum, and vermiform appendix, everted to show the state of parts in typhoid fever. The sloughs have separated, and some ragged-looking ulcers with thickened edges remain. (The specimen is injected.)

Presented by Francis Kiernan, Esq., 1871.

2494. Portion of the small intestine, showing two perforating ulcers, possibly the result of typhoid fever. (The specimen is injected.)

Presented by Francis Kiernan, Esq., 1871.

2495. A similar specimen, from a patient who died with typhoid fever at Vienna, exhibiting also numerous small, round, shreddy sloughs of the mucous membrane of the cæcum, like those of the solitary glands of the ileum. Each slough is surrounded by a narrow ulcerated groove, indicating the process for its separation.

Presented by Charles Moore, Esq.

2496. The lower end of an ileum, from a case of typhoid fever at Vienna. A large patch of Peyer's glands, occupying nearly the whole circumference of the intestine, is diseased, presenting an elevated margin and a flocculent surface made irregular by elevations and depressions. Some of the depressions are produced by the separation of small sloughs, exposing the muscular coat : other portions of the patch are covered with small flakes, apparently of lymph. By the

side of this patch is another of smaller size, similarly diseased, and above it an enlarged solitary gland with a slough in its centre.

Presented by Charles Moore, Esq.

2497. Portion of ileum, doubtless from a case of typhoid fever, exhibiting a more advanced stage of the disease already described. The borders of the Peyer's patches, and the mucous membrane generally, are less swollen; the villi are smaller. In many places large sloughs have separated from the patches of glands, exposing the submucous tissue, or the circular muscular fibres, either apparently healthy or else a little thickened and granular. In other places large flocculent, shrivelled-up, and dirty brownish sloughs remain attached in the places of the glands, and hang in loose shreds into the cavity of the intestine. The solitary glands and the smaller Peyer's patches are less diseased than the larger. Wherever sloughs have separated, the sloughing has extended a little under the swollen and elevated border round the patch, which border therefore appears like a thin margin overhanging the base of the ulcer. *Hunterian.*

2498. A portion of small intestine from a patient who died with typhoid fever. In the upper part of the preparation is a large ulcer which has perforated the coats of the intestine, but the aperture is blocked up by a nearly detached, dark-coloured, shreddy slough. A layer of lymph has been effused upon the adjoining peritoneal surface. Towards the lower part of the specimen is another large ulcer, the base of which is formed by the submucous tissue, and from which a ragged slough is partially detached. Several smaller ulcers are also scattered upon the mucous membrane.

Presented by Dr. S. J. Goodfellow.

2499. A portion of ileum, injected and everted. There is a large oval typhoid ulcer, corresponding to one of the Peyer's patches, from which the slough has separated, and which appears about to heal. There are also several smaller circular ulcers formed by the ulceration of the solitary glands.

The increased vascularity of the thickened mucous membrane around the edges, and the dense, white, and but slightly vascular tissue of the base of the ulcerated surfaces are well shown in this preparation.

Presented by Dr. S. J. Goodfellow.

2500. A portion of ileum, in the mucous membrane of which are several small circular ulcers with elevated margins, which appear to have been the result of the complete separation of sloughs of the small aggregated and solitary glands; several of the latter are enlarged. *Hunterian.*

2501. A portion of ileum, in the mucous membrane of which are numerous small circular or transversely elongated oval ulcers, with smooth bases and clean-cut edges, as if resulting from the separation of sloughs from the smaller aggregated and solitary glands: probably from a case of typhoid fever.

Presented by Dr. S. J. Goodfellow.

2502. Portion of colon, in which three small typhoid ulcers are nearly healed after the separation of sloughs. The base of each ulcer, limited by the muscular fibres of the intestine, is smooth and clean, and overhung by the margins of apparently healthy mucous membrane, from beneath which the sloughs separated. All the other tissues appear healthy.

Presented by Charles Moore, Esq.

- 2502 A. Portion of colon, from a person who is said to have had dysentery. The ulcers, partially healed, and the general aspect of the parts are like those last described.

Hunterian.

The preparation is engraved in Baillie's 'Morbidity Anatomy,' fasc. iv. pl. 2. fig. 4.

2503. Part of a large intestine, the mucous membrane of which is in parts thickly, in parts scantily, covered with superficial ulcers, varying in size from minute rounded points to ulcers with a diameter of three quarters of an inch. The

smaller ulcers are rounded and their edges are cleanly cut as if punched-out ; but the edges of the larger ulcers are thin, shreddy, and undermined. The bases in all appear clean and formed by the muscular coat.

From a patient who died with typhoid fever. (See Trans. Path. Soc. vol. xxxiv., 1883.)

Presented by Dr. Samuel West, 1883.

2504. A cæcum, with its appendix vermiformis and the last portion of the ileum, in each of which there are several small deep ulcers of the mucous membrane, probably typhoid ulcers nearly healed. Their bases are smooth, formed of the sub-mucous tissue slightly thickened and granular, and the borders of their bases are covered by their elevated overhanging edges. The ulcers in the ileum have the form of small Peyer's patches ; those in the cæcum and its appendix are smaller, and either oval, round, or irregular in outline.

Hunterian.

2505. Portion of ileum, in the mucous membrane of which there are several large ulcers, probably typhoid ulcers, healing after the complete separation of the sloughs. They are irregular in shape, but approach the round or oval form, and are situated opposite the attachment of the mesentery. Their bases are smooth, being formed by the layer of transverse muscular fibres cleanly exposed ; and they are bounded by healthy mucous membrane, a border of which, a line or two in breadth, projects and hangs over the base of each ulcer. All the adjacent coats of the intestine appear healthy.

Hunterian.

2506. Portion of ileum, in which several small typhoid ulcers are completely healed. Their bases are smooth and clean, formed, apparently, of cellular tissue ; their margins do not overhang their bases, but are gradually inclined towards them. There is no contraction, wrinkling, or stricture of the intestine near or around the ulcers ; and all the tissues adjacent to them appear healthy.

Presented by Charles Moore, Esq.

2507. The lower part of an ileum, from a case of typhoid fever. About two inches from the ileo-cæcal valve is a somewhat quadrilateral ulcer which is completely cicatrized. In the recent state there were several similar ulcers, and others in various stages of cicatrization.

From a woman aged 50. She had been ill about a month when she was admitted to Hospital, and she lived a month afterwards. She died from exhaustion consequent upon a sloughing bed-sore. Suppuration was found in the region of the gall-bladder as well as the ulceration of the intestine (2806).—*MS. Notes*, vol. ii. p. 214.

Presented by Dr. J. F. Goodhart, 1871.

2508. Portion of ileum, in which the mucous and submucous tissues surrounding and subdividing a large collection of Peyer's glands are thickened and elevated above the surrounding surface. The elevated part has a smooth raised border, and its surface is perforated with numerous round and oval apertures leading to small pits, but without any appearance of ulceration. The adjacent solitary glands are enlarged. *Hunterian.*

2509. A similar specimen, in which several small collections of Peyer's glands are elevated above the surrounding surface. Their borders are smoothly rounded, and their surfaces perforated by numerous large apertures. *Hunterian.*

2510. A similar preparation. *Hunterian.*

2511. A similar preparation exhibiting, like the three preceding specimens, a patch of Peyer's glands enlarged and elevated beyond what is usually found in health. *Hunterian.*

2512. Portion of ileum, showing "inflamed glandular parts."—(*Hunterian MS. Catalogue.*) The patches of Peyer's glands appear swollen and occupied by or covered with some morbid substance.

2513. Portion of ileum, in which the tissue around part of a collection of Peyer's glands is thickened, and (when recent)

appeared inflamed. A piece of false membrane adheres to the peritoneum opposite the diseased part, over a spot in which there is an appearance of a small deep ulcer.

Hunterian.

2514. Portion of ileum, of which the blood-vessels were minutely injected. Two collections of Peyer's glands are elevated above the surrounding membrane, and their surfaces are rendered irregular by numerous long and chiefly transverse ulcerated (?) depressions. Adjacent to them are several small circular ulcers with elevated round margins. The parts occupied by the glands are much less vascular than those around them.

The preparation is engraved in Baillie's '*Morbid Anatomy*,' fasc. iv. pl. 2. fig. 3. The specimen is probably part of that which Mr. Hunter describes in the following case:—

"*Winter, 1763-4.*—A man in Mr. Fordyce's hospital had just recovered of a fever, when he was taken ill with a violent pain in his belly just at the navel. He was ordered a clyster and a blister, but he had a natural stool; the pain continued, and within twenty hours of the attack he died.

"Upon opening the belly we found the peritoneum very much inflamed; the epiploon covered the whole [of the] viscera, and was of a darkish colour, as if wetted with blood. We found a universal inflammation in the whole visible contents of the abdomen; the liver was glued to the diaphragm and the stomach wherever it touched. All the intestines were likewise glued together, and of a very dark colour where there was no compression by other surfaces.

"I examined the gall-bladder, and found it as large as my fist, and two holes at its fundus. Upon introducing my finger I found two more. There was but little bile in it, for it was all got loose in the cavity of the abdomen, and had by that [means] tinged the glutine.

"I took out a piece of the ileum to inject, to see the size of the vessels, which I did.

"Upon the inside of the intestines I observed several bodies, some as broad as a farthing, some smaller: they had a depression in their middles, so that they appeared like circular or oval ridges or risings. The texture of these risings was spongy or cellular, whose openings looked into the guts.

"Some of them appeared to be a thickening of the rugæ of the internal surface, for in the oval ones I could trace two rugæ into them. Why they should be depressed in the middle I can't tell, but this appearance I have often seen.

"Was the gall-bladder become rotten in this short time, or was

it just burst as the pain came on, and was the cause of this universal inflammation in the abdomen? This is somewhat reasonable, as the inflammation seemed to be more on the external surface of the viscera than on the internal."—*Hunterian MS.: Dissections of Morbid Bodies*, No. 68, p. 94.

2515. A similar preparation. Many of the depressions on the surface of the elevated portion are filled with small masses of a white flocculent substance resembling sloughs.

Hunterian.

2516. A similar preparation, with more distinct appearances of ulceration.

From a person who is said to have died with dysentery.

Hunterian.

2517. Two portions of ileum, in which the Peyer's and solitary glands are very much enlarged, and appear in some situations to be superficially ulcerated.

Hunterian.

The following cases most probably belong to some of the preceding specimens of affection of the intestinal glands; and, though it is perhaps impossible to assign them exactly to their appropriate specimens, are inserted because they will serve to show Mr. Hunter's thoughts upon the subject, and how closely he was observing, in the hope of explaining, the appearances exhibited in these preparations:—

"*September*, 1758.—In this autumn we got a stout man for the muscles, from St. George's ground. He had been blistered on the back and arm.

"In taking out the intestines I observed a volvulus in the ileum, where the inferior [portion] was pushed up into the superior; and a little way from that I found another, but just the reverse. I found likewise, in the intestinum ileum, a number of inflamed spots, some very broad, some very small. These parts were extremely thickened, became more in number and broader towards the termination of the ileum. I injected the piece where the volvulus was, where there were some of these inflamed spots. I found them very vascular in substance, but the villous coat of the intestine was there destroyed. They were very irregular on their surface, like swelled ulcerated tonsils; and those that were very bad had adhering to the surface a slough of yellow matter. Besides these broad swellings, there were a great many of a lesser size that were not ulcerated. The smallest were round bodies about the size of a large pin's head; and as they became larger they became flatter, and seemed to be more porous. On each of the

small ones I saw a dark spot ; and, upon blowing on that spot, it was evidently an orifice in the internal villous coat of the intestine ; and on examining the gradation of their size, I could plainly see this orifice become larger as the small body became larger, so that it exposed more and more of the internal surface of the small body ; and then I could plainly see that the body was porous, something like the mamma of the kidney at its very point, and on squeezing I could throw out some mucus.

“ These appearances seemed plain to me to be the glands of the intestines increased by inflammation, and at last ulcerated ; and as the glands of the intestines are of two sorts, we had two sorts of swellings ; for I take the small, round, and flat bodies to be the solitary, and the broad ones to be the aggregate, as there are really such ones in the intestines.

“ What confirms this most is, that the parts that were least inflamed had very nearly the common appearance that the aggregate have without inflammation, so that I could trace on the gradation of inflammation from the first to the last. That the small ones were glands I am pretty certain, on account of the orifices and the mucus that I squeezed out ; and what still confirms it further is, that these glands are most in the ileum, especially the aggregatæ.


“ These parts I have made preparations of. I have preparations of the same appearances, but not come to such a state of inflammation, and these preparations prove them to be glands ; and these broad appearances I have seen several times, but never understood what they were.

“ I think inflammations are generally more frequent in the ileum than any other of the intestines, and are, I think, generally more violent. What is the cause of this I don't know, but it is perhaps for two reasons : first, that inflammation sooner attacks the glands of the guts than any other part, as in this body, and in some more that I have seen ; secondly, that inflammation of the stomach, duodenum, and jejunum is not carried to such a length before death happens.

“ The colon seems to be the next, especially above the cæcum and rectum, for we often find this inflamed and ulcerated.”—*Hunterian MS.: Dissections of Morbid Bodies*, No. 48, p. 55.

“ I opened the body of Sir William Lee's child, who died of convulsions and fever, supposed to arise from teething. It was one year and a half old. She was always inclinable to be costive ; took magnesia, crab's eyes, &c.

“ The abdominal viscera appeared to be very sound, excepting on the external surface of the intestines there were vascular spots, and a loose vascular fringe hanging from them, as if they had formerly adhered by these but they had been broke off ; but this can hardly be supposed to be the case. On feeling these between the finger and thumb I found them thicker than the other parts of the intestines. I cut into the intestines, and examined their appearance on their inside. I found that they were without exception in the glandular parts of the intestine, and that it was a gland increased to the breadth of sixpence in

some parts, but in common much smaller; and that the inner surface of the cavity or duct was spread in some  so wide, villous on the inside, with a loose floating edge, which was not so wide as the bottom, something like a Scotchman's bonnet. Some of them had no glandular part of the gut contiguous to them, therefore were the solitaria; others, especially those in the ileum, were only one of the aggregatæ, for it was either surrounded with them or at one end. The appendix cæci was full of them.

"What surprised me was, that these are just the appearances of these parts of the intestines in the first stages of the dysentery; yet this child had no symptoms of any complaint in the bowels, excepting the very reverse of a dysentery. The lungs had greatly the smell of the smallpox."—*Hunterian MS.: Dissections of Morbid Bodies*, No. 119, p. 202.

"On opening Miss Todd, a young Girl, about nine years of age, who had been ill for a considerable time with Complaints in her Breast and Bowels :

"Just before she died she was very costive, and hardly any thing would pass through her. She had purges given her, which only seemed to bring away a little mucus, with some quantity of excrement. Her belly swelled much, and seemed not to be lessened by the physic.

"We found in the abdomen all the viscera sound to appearance, only the colon very much distended with air, and some dark knotted fæces, but not a great deal in quantity. At the termination of the ileum and beginning of the colon, there were the hollow cups or small circular parts of the inner membrane whose hollowed surface is often irregular, and where the inner coat terminates there it rises, or forms a brim, like many callous edges of sores, but they were very slight. The lungs on the left side were adhering everywhere to the pleura, with steatomatous swellings in them.

"The ventricles were distended with water, I should suppose about four ounces. The cerebellum had a number of small round bodies of the steatomatous kind in its substance, of a green colour.

"There were no symptoms before death that could make a physician suppose that there were any diseased appearances in the brain."—*Hunterian MS.: Dissections of Morbid Bodies*, No. 147, p. 238.

2518. Portion of an ileum, in which all the Peyer's patches and solitary glands are swollen and elevated. In the recent state their tissues appeared œdematous, succulent, soft, and rather thickened; and all the adjacent and intervening mucous membrane was similarly, but in a less degree, diseased. In a few places there are small deep ulcers in the middle of the Peyer's patches, and the tops of the swollen solitary glands appear superficially ulcerated.

The patient, a lad 14 years old, was affected with diarrhoea during an attack of bronchitis ; but appeared convalescent, when, four days before his death, diarrhoea again ensued, attended with severe pain and tenderness of the abdomen, constant vomiting, and fever.

Presented by Dr. Baly.

2519. Portion of an ileum, in which all the Peyer's patches and solitary glands are swollen and elevated. Numerous small, but deep, ulcers are seen upon the surface of some of the patches, giving them a peculiar pitted or worm-eaten appearance. By the confluence of such ulcers, the whole substance of the larger patches is irregularly excavated, leaving only the elevated and tumid margin.

Presented by Dr. S. J. Goodfellow.

2520. Portion of an ileum, exhibiting a similar tumid condition of the solitary and Peyer's glands. On the surface of one of the latter ulceration has commenced.

From a case of typhoid fever.

Presented by Dr. S. J. Goodfellow.

Stricture.

2521. The sigmoid flexure of a colon, with an ulcer extending round it. The ulcer is puckered, as if from cicatricial contraction, and its edge is slightly thickened at the mesenteric attachment, but there is little, if any, eversion of the edge of the ulcer. Perforation of the colon has occurred above the disease, and a large ragged aperture is seen. The colon was considerably dilated and hypertrophied, the whole length of the intestines above the stricture was much distended, and the ulcer had led to so much contraction that the passage only admitted the point of the forefinger.

There was no appearance of any cancerous disease. The case is recorded in the 'Transactions of the Pathological Society,' vol. xiii. p. 97.

Presented by Dr. Peacock, 1876.

2522. A portion of colon, of which the canal is at one part nearly closed by a thickening and contraction of its walls. At the seat of the stricture the mucous membrane is raised in thick folds, and several ulcers lead through it to narrow fistulous canals, which pass into the surrounding condensed tissues, in the course indicated by some bristles. Above the stricture are several small superficial ulcers of the mucous membrane.

It is probable that this disease originated in abscess in the cellular tissue connecting the colon with the abdominal walls.

Hunterian.

Morbid Growths.

2523. A portion of a cæcum, in which rounded tumours, after extensively thickening the submucous tissue, have bulged into the channel of the bowel. The mucous membrane is ulcerated over them. A section of the tumours shows that they are of a soft, yellow, spongy and vascular structure.

When examined in 1884, the condition of the specimen did not admit of a certain conclusion being drawn as to the nature of the morbid growth. Generally the appearances resembled those of cancer.

Presented by Francis Kiernan, Esq., 1871.

- 2523 A. A considerable portion of an ileum, with great enlargement of all the Peyer's patches from infiltration by lympho-sarcoma. They are exceedingly prominent, standing out quite free of the mucous membrane, with overhanging edges, and are of fleshy consistence. The rest of the mucous membrane and the solitary glands are apparently healthy.

From a woman, aged 50, whose cervical, axillary, inguinal lymphatic glands and spleen were enlarged. She was feeble, emaciated, and pale; but there was no leucocythæmia. She died exhausted. At the post-mortem examination the mucous membrane of the stomach was found to be much thickened, and the cæcum was occupied by a large lympho-sarcomatous growth attached to the valve. The spleen weighed 44 oz., was generally infiltrated with a similar growth, and the Malpighian bodies were excessively enlarged. (See Trans. Path. Soc. vol. xxxiv. 1883.)

Presented by Dr. F. Goodhart, 1883.

- 2523 B. Another portion of the same ileum.

2524. A portion of an ileum, on the mucous surface of which two cancerous ulcers are seen. They are transverse in direction and, in many respects, are like tuberculous ulcers; but the tubercles on the peritoneal aspect are larger than is usual in tubercular disease, and the coats of the intestine contained cancerous growth.

From a man, aged 31, who died with cancer of the lung, heart, kidneys, suprarenal capsules, and intestines. Other parts of the viscera are preserved in 3423. (Trans. Path. Soc. vol. xiv. p. 40.)

Presented by Dr. Peacock, 1876.

2525. Portion of jejunum, on the inner surface of which is a flat tumour, superficially lobed, with a sinuous border, occupying the whole circumference of the intestine, and about two inches wide. The tumour has a soft, obscurely fibrous structure, and part of its surface is ulcerated. On another portion of the same intestine a similar but smaller tumour has been cut through, and its sections present soft surfaces, with long shreds hanging from them. *Hunterian.*

2526. A portion of small intestine with a raised, rounded plaque of cancer projecting about one eighth of an inch above the mucous membrane, and five eighths of an inch in diameter; its surface is broken and fissured, and its edges overlap the mucous membrane around its base of attachment.

2527. Another portion of small intestine, with a much smaller oval cancerous nodule having a smooth rounded surface.

This and the preceding were in the Museum of Sir Astley Cooper.

The following entry is in the MS. Catalogue of Sir Astley Cooper's Museum:—

“Incipient Fungus in the Glands of an Intestine. Napoleon.

“Barry O'Meara to Sir Astley Cooper.”

The truth of the statement that these portions of intestine were taken from the body of the Emperor Napoleon I. is open to grave doubt. Dr. Antommarchi, Napoleon's personal physician, states, in his very complete account of the post-mortem examination, that “the mucous membrane of this canal [intestinal] appeared to be in a sound state;” and in the separate report, drawn up by the English surgeons present at the autopsy, the statement is found

that, with the exception of the stomach, "the abdominal viscera were in a healthy condition." It further appears from Dr. Barry O'Meara's memoir ('Napoleon in Exile,' &c.) that he was recalled to England nearly three years before Napoleon's death; and the steps taken by Napoleon's personal attendants to prevent the abstraction of the heart and stomach also show the improbability of these specimens having had the source ascribed to them.—*October 1883.*

2528. The lower part of an ileum, with part of the cæcum, in which the lower part of the small intestine is narrowly constricted by a cancerous growth. The surface of the intestine is uneven from the presence of small flattened tubercles of new growth which have formed in the subperitoneal tissue.

Examined in 1884, the morbid growth had microscopically the appearances of cancers, which originate in the mucous membrane of the intestine.

Presented by Sir T. Spencer Wells, 1876.

2529. Portion of colon, which is at one part abruptly contracted to such an extent that its canal is nearly closed. The contraction appears to have taken place around a small ring-shaped, spongy, medullary tumour of the mucous membrane. The tissues round the tumour are slightly thickened and indurated; above it, the canal of the intestine is considerably dilated; below it, contracted. *Hunterian.*

2530. A portion of transverse colon with a tight annular stricture in its centre, puckering of the external parts, and adhesion to the stomach. An opening in the posterior aspect of the intestine at the strictured part led into a cavity outside the bowel. The anterior wall of this cavity alone is seen, the rest having been destroyed in the extraction of the specimen. A bristle is passed from either end of the bowel into it. The bowel is dilated above and rather small below the contraction. The substance of the stricture showed microscopical appearances indicative of cancer.

The history is as follows:—A clergyman, aged 52, had enjoyed

good health till seven days before his death, though when young he had some illness connected with his left lung, and twenty years before he had something "very wrong," as he said, "with his stomach." This fatal attack commenced with sickness, for which he took castor-oil. The next day he vomited several times, the pulse being 80. The bowels had not acted for five days. The constipation remained insuperable; and he died rather suddenly with peritonitis.

At the inspection the intestine was adherent to the stomach, and the coils of the small intestine had adhesions between them in several places. The cæcum was perforated in two places. The liver and kidneys were healthy. (MSS. Notes, vol. ii. p. 22.)

Presented by George W. Shipman, Esq., 1873.

2531. The stomach and colon, with a cancerous ulcer between the two cavities. The stomach and colon open into a large ragged space between them, the walls of which are formed by a cancerous mass. The growth probably commenced in the colon.

From a charwoman aged 55. She had wasted for eight or nine months, and for the last three months had kept to her bed. She had never vomited or passed blood. She died from exhaustion. No other viscera were affected. ('Medical Times and Gazette,' vol. i. p. 652, 1876.)

Presented by Dr. Lediard, 1876.

2532. A portion of colon, in which the canal appears to have been completely and suddenly closed. The tumour round which the contraction took place is very small; and the adjacent tissues appear nearly healthy.

Presented by Sir Everard Home.

2533. Portion of colon near its termination in the rectum. The canal, through a length of an inch and a half, is very nearly closed by the thickening and contraction of its walls round, apparently, a small flat and superficially ulcerated cancerous tumour. On the exterior of the contracted part some enlarged lymphatic glands are indicated by portions of bristles. The intestine above the stricture is dilated, and below it is contracted.

Hunterian.

2534. Portion of the sigmoid flexure of a colon, exhibiting appearances of disease similar to those last described. The canal is almost obliterated. The inner surface of the tumour is ulcerated; its margins are somewhat elevated and sinuous. The mucous membrane of the portion of intestine below the stricture is deeply wrinkled, but healthy.

The patient, a man 32 years old, appeared healthy till within seven weeks of his death, when, for a few days, he had pain about the umbilicus. Some time after, he had signs of inflammation of the intestines, attended with obstruction of the intestinal canal which continued unrelieved for seven weeks.

After death an ulcerated aperture was found above the disease here shown, opening the intestine into the cavity of the abdomen. The whole canal above the disease was exceedingly distended with fæces and bile.

Presented by Joseph Swan, Esq.

2535. Portion of a colon affected to the extent of three inches with colloid cancer. Its walls are much thickened and the calibre correspondingly contracted.

From a lady aged 66. She had suffered for six months from gradually increasing pain in the abdomen and hips, and increasing difficulty in obtaining evacuations from the bowels. There had been no discharge of blood or mucus. The obstruction of the bowels became urgent, and eleven days before death colotomy was performed in the left loin, to her great relief. In addition to the disease in the colon there was a colloid tumour between the rectum and vagina, an ovarian cyst containing similar material in its walls, and minute deposits in various parts of the peritoneum.

No. 4543 is from the same patient.

The case is recorded in the Trans. Path. Soc. vol. xvii. p. 120.

Presented by T. Blizard Curling, Esq., 1866.

2536. The sigmoid flexure of the colon and adjacent parts, with an ulcerated cancer in the walls of the former. The bowel has been opened, exposing a deep ulcer with thick and sinuous edges.

From a woman aged 65, who was admitted into hospital for an abscess in the abdominal parietes containing gas. At the inspection this was found to be due to the disease shown in the preparation. The cancer had infiltrated the abdominal wall above Poupart's ligament, and ulceration and fæcal abscess had ensued.

Presented by Dr. Goodhart, 1874.

2537. Portion of intestine (not human), of which the mucous membrane is elevated by a layer of small, closely set vesicles, filled with a pellucid fluid ; an example, perhaps, of colloid cancer. *Hunterian.*

Tubercle of the Intestines.

2538. Portion of the lower part of an ileum (with a small diverticulum) exhibiting numerous large tuberculous ulcers. The ulcers are various in form and size ; they are situated on all parts of the intestine, and some of them extend round its whole circumference. Their margins are irregular, elevated and somewhat thickened, but not abrupt or overhanging ; their bases are very uneven, the ulceration penetrating to different depths ; and, in some cases, small tubercles may be seen lying beneath and elevating the ulcerated surface. Two of the ulcers have penetrated through the whole thickness of the coats of the intestine, and in several others the peritoneal coat alone remains. Numerous groups of small tubercles lie scattered beneath the peritoneum, and on many parts of it there are remains of adhesions.

Presented by Sir James Paget.

2539. Portion of the colon from the same patient, with several similar ulcers. One of them has perforated the intestine. There are also similar tuberculous deposits beneath the peritoneum.

Presented by Sir James Paget.

2540. The lower part of the ileum with the ileo-cæcal valve, showing numerous small deposits of tubercle beneath the mucous membrane and tubercular ulcers in various stages.

From a Bushwoman who died in London in 1864 of phthisis pulmonalis. The skeleton is preserved in the Osteological Series No. 1302 ; and the anatomical peculiarities are recorded in the 'Journal of Anatomy and Physiology,' vol. i. p. 189, for 1867.

2541. Portion of jejunum, inverted, in which an ulcer (probably tuberculous), occupying the situation of a collection of Peyer's glands, has penetrated through all the coats. The ulcer is nearly circular, has a diameter of about half an

inch, and its margins are smooth, rounded, and abrupt. The rest of the intestine appears healthy. *Hunterian.*

2542. Portion of jejunum, with part of the mesentery. An oval ulcer, extending more than half round the intestine, has penetrated deeply through its mucous membrane, and has at one part perforated all its coats. The aperture, which is circular and about one third of an inch in diameter, was closed with a thick layer of false membrane, part of which is now reflected. Beneath the peritoneum surrounding the aperture are some small masses of tubercle, and several lymphatic vessels, tortuous and distended with tuberculous matter, some of which may be traced in the same condition to three enlarged mesenteric glands. *Hunterian.*

2543. Portion of small intestine, from a person who is said to have had dysentery, but probably had tubercular disease. There are several ulcers of the mucous membrane, of an elongated oval form, having their longest diameters transverse to the axis of the intestine and, in two instances, extending round it. Their bases are irregularly and very coarsely granulated and knotted; their margins well defined, uneven, formed of somewhat thickened mucous membrane, and in parts just overhanging their bases. In the middle of the largest ulcer (at the upper part of the preparation) the ulceration has, in a very minute space, extended abruptly through all the coats. The peritoneal coat of the intestine is almost covered with recent lymph; and all its coats are rather thicker than is natural.

From the Museum of John Heaviside, Esq.

2544. A portion of ileum, everted, on the mucous surface of which is a large ulcer of somewhat circular form. Its base is formed of thickened submucous tissue, and the membrane at its edge is broken up into delicate flocculent shreds. In the upper part of the preparation is a much smaller ulcer with similar characters.

From a patient who died, at the age of 27, of phthisis pulmonalis.

Presented by Sir Stephen L. Hammick.

2545. Portion of colon, from a person who is said to have recovered from dysentery, but the ulcers have more of the tuberculous than the dysenteric characters. Two of them, elongated and oval, are very like those last described, but their margins and bases are smoother, as if nearly cicatrized. Beneath the peritoneum covering the larger of these two ulcers are some appearances of small tubercles. The other ulcers are small, round or oval, with level bases and elevated, smoothly rounded margins turned in over the borders of their bases, and nearly healthy in their apparent texture. *Hunterian.*

2546. Portion of small intestine, from a *Cariama* (*Cariama cristata*), the blood-vessels of which have been minutely injected. It exhibits several small masses of tuberculous matter, raised a little above the surface of the mucous membrane. Many of them are exposed by its ulceration. The paleness of the tuberculous matter contrasts strongly with the bright redness of the injected mucous membrane and its villi; the more strongly because the villi are removed from over the surface of nearly all the tubercles. In the centre of the specimen is a large elevated patch, probably of diseased glands, covered with a dark layer like a slough.

Presented by the Council of the Zoological Society.

2547. A portion of ileum injected, showing tubercular deposit in and ulceration of its coats. The surfaces are but little indurated, though very vascular, and the floor of the ulcer presents a yellow caseous appearance. Yellow tubercles are seen on the peritoneal aspect.

Presented by Francis Kiernan, Esq., 1872.

2548. A similar specimen, with more softening and some constriction of the bowel at the seat of ulceration. The coats of the intestine do not appear thickened.

Presented by Francis Kiernan, Esq., 1872.

2549. "Scrofulous tubercles on the [stomach and] intestine of a Sparrow."—*Hunterian MS. Catalogue.*

Enterotomy.

- 2549 A. On the right side of this preparation is a portion, two inches in length, of the middle of the descending colon, removed on account of a cancerous growth, which had given rise to obstruction. The growth, a cylindrical-celled cancer, occupies less than an inch of the length of the bowel, and is extremely contracted at its centre ; it is traversed by a canal not larger than a crow-quill. Above the stricture the bowel is dilated, and the new growth presents an everted margin around the orifice of the constricted portion of the canal.

On the left side is the portion of the descending colon from which the preceding was removed. The divided edges of the bowel are evenly united by interrupted sutures.

From a man who had suffered from intestinal obstruction for some months ; he was *in extremis* when the operation was performed, and died twelve hours afterwards. On post-mortem examination the divided bowel was found distended with faecal matter, but none of its contents had escaped into the peritoneal cavity. (See Med.-Chir. Trans. vol. lxvi. p. 64.)

Presented by Frederick Treves, Esq., 1883.

- 2549 B. Part of an ileum, a portion of which, having descended in a femoral hernia and become gangrenous, was removed. The divided edges of the intestine are evenly united with interrupted sutures, and have become adherent by lymph.

The patient, a female aged 28, was operated-on for an acutely strangulated femoral hernia. The intestine was gangrenous, and faecal extravasation had taken place. The wound was enlarged upwards through Poupart's ligament, and the gangrenous portion of intestine was removed. Death took place in twenty-eight hours from acute peritonitis, which existed at the time of the operation.

Presented by Frederick Treves, Esq., 1883.

Specimens of Diseases of the Intestines in other parts of the Museum are:—Nos. 153 to 158, 197, 198, 521, 556, 2345, 2348, 2621, 2627, 2719 to 2722, 2726, and others in Series XXI. and XXV.

DISEASES OF THE CÆCUM, ITS VALVE AND APPENDIX.

2550. A cæcum, with a part of the ileum. The aperture of the ileo-cæcal valve is large, and its margins are thickened as if œdematous. There is no other appearance of disease.

Hunterian.

2551. The lower end of an ileum, with part of a cæcum and its appendix. The aperture of the ileo-cæcal valve is contracted to a diameter of a quarter of an inch: a quill is passed through it and is closely surrounded by it. The lower part of the ileum is dilated. The adjacent mucous membrane and other tissues appear healthy. An enlarged and indurated lymphatic gland is attached to some thickened tissue at one side of the termination of the ileum. A bristle is passed into the orifice of the appendix cæci.

From the Museum of Sir A. P. Cooper.

Ulceration.

2552. The cæcum from a patient who died of phthisis. The cavity of the cæcum is almost obliterated, the small and the large intestine forming one continuous canal. At the position of the ileo-cæcal valve the mucous membrane becomes puckered and warty-looking; and into one of the larger warty or teat-like projections a tube has been passed to show an opening into a cavity which appears to be the remains of the cæcum (caput cæci), and into which the vermiform appendix opens. Lower down a closer arrangement of processes obtains, each fold being smaller, and sinuses of curious form run from these into the cavity called the cæcum. Glass rods are passed along two of these. There is slight ulceration of the small intestine, but none in the large. It seems doubtful whether these appearances are produced by puckering from old ulceration, or whether they are due to congenital malformation.

Presented by Dr. Goodhart, 1874.

2553. A cæcum, with its appendix and the last portion of the ileum. The whole of the mucous membrane seems to be

superficially ulcerated, for it is very thin and there is scarcely a trace of the villi. At several scattered points the ulceration has extended more deeply and has destroyed the whole thickness of the mucous membrane. This is especially the case at the ileo-cæcal valve and in the appendix vermiformis. The edges of the former are as if corroded; the cavity of the latter is at one part obliterated.

Hunterian.

Ulceration and Perforation of the Appendix Vermiformis.

2554. Part of a cæcum, with its appendix and the end of the ileum. A piece of whalebone is passed through a small ulcerated aperture in the coats of the appendix, by which its interior communicated with the cavity of an abscess external to the cæcum. The interior of the intestine is healthy.

The patient had been a healthy young man; but a seed, lodging in the appendix cæci, caused ulceration of it. An abscess then formed in the vicinity of the cæcum, and at length burst into the pelvis and produced fatal peritonitis.

Presented by Joseph Swan, Esq.

2555. A portion of a colon, with the cæcum and appendix vermiformis. In the latter, about half an inch from its commencement, is an ulcer (indicated by a bristle) which has perforated all its coats. Some lymph has been thrown out around the margin of the aperture and upon the serous surface of the bowel.

From a girl, 10 years of age, delicate-looking, but generally in good health. On June 19th, 1851, she was feverish, complained of pain in the abdomen, and the bowels were costive. Two days before, she had eaten damson-pudding, and might have swallowed a stone; she had also fallen from a low window some time before, and once complained of hurting the side of her abdomen against a wheelbarrow. She died after an illness of six days with symptoms of peritonitis.

On post-mortem examination the small intestines were found greatly distended with air, and covered with flakes of recent lymph, by which they were rendered more or less adherent to each other. The lymph was particularly abundant around the cæcum and vermiform appendix, and on separating some adherent coils of ileum a small quantity of pus was seen in the right iliac

fossa. An ulcerated opening, admitting a common-sized director, was seen near the base of the appendix vermiformis, which contained a quantity of clay-like matter, which on pressure escaped through the aperture. The communication between the appendix and the bowel was completely closed by a plug of lymph deposited close to the ulcerated opening. The whole of the intestinal canal was carefully examined, but nothing else abnormal was discovered, except that the mucous membrane of the last four inches of the ileum was much congested and ecchymosed.

Further details of the case will be found in Dr. Crisp's Jacksonian Prize Dissertation on 'Obstructions of the Intestines,' 1851, MS. Roy. Coll. Surg. Library.

Presented by Dr. Edwards Crisp.

2556. The lower part of an ileum, with the cæcum and its appendix, showing perforation of the appendix vermiformis and abscess in the right iliac space.

From a girl aged 17. Three years before her death she had a subacute attack of peritonitis, from the effects of which she suffered ever afterwards. Her last illness commenced with symptoms of general peritonitis in May and she died in the August following. The intestines were much matted together, and a large abscess occupied the region of the cæcum. The canal of the appendix communicated with the abscess by two ulcerated openings. The appendix was free from obstruction; but in the cæcum was some hard faecal matter, a portion of an almond shell, and a whip-worm (*Tricocephalus dispar*). (Path. Soc. Trans. vol. xviii. p. 87.)

Presented by Dr. Peacock, 1876.

2557. The lower part of an ileum with the cæcum and appendix cæci, showing perforation of the latter. A large abscess surrounded the appendix, which was nearly separated from the cæcum. Nothing was found in the abscess which seemed likely to have been impacted in the appendix.

From a gentleman aged 29, who had been in the habit of taking aperient medicine, and who had not long before had an attack similar to his fatal seizure. This began by a feeling of illness, for which he took a pill. It operated with much pain, and soon after symptoms of general peritonitis came-on, and with these he died in thirteen days. (Path. Soc. Trans. vol. xxi. p. 182.)

Presented by Dr. Peacock, 1876.

2558. The end of an ileum, with the cæcum and its appendix. The free extremity of the appendix is adherent to the abdominal walls, and its cavity communicates with an ulcerated

aperture in the groin, through which a quill is passed. The rest of the intestine is healthy.

From the Museum of John Heaviside, Esq.

Mercurial Deposit.

2559. A portion of the colon of a lady aged 74, who for the last forty-three years of her life had been in the habit of taking a grain of calomel every night. The mucous surface of the intestine is remarkably black, mottled in parts with patches of a lighter hue, and presenting somewhat the appearance of a toad's back. The coloration is due to a deposit of mercury in the submucous tissue.

The patient had for forty-three years of her life taken a grain of calomel every night, except on some twenty occasions, when she had substituted for it either blue pill or grey powder. In addition she took an extra dose of calomel, varying from half a grain to a grain, twice a week. For many years she did not suffer in health, but latterly she had become cachectic with anasarca and albuminous urine. The kidneys were granular. Part of the cæcum was analysed by Reinsch's test, and globules of metallic mercury extracted. The other viscera contained none. (Path. Soc. Trans. vol. xviii. p. 111.)

Presented by Dr. C. Theodore Williams.

Concretion in Appendix Vermiformis.

- 2559 A. Two halves of concretions from the vermiform appendix. The larger is oval, one third of an inch long, and consists of four concentric layers of a brittle dark brown substance, separated by very thin layers of a pale material, probably dried mucus, which also lines a central oval cavity.

The brown substance, when powdered and placed under the microscope, showed cholestearine crystals and crystalloid orange-coloured bodies, but hardly a trace of fibres of any kind; and when boiled with water to which a minim of acetic acid had been added, it became soft, clay-like, and emitted a fæcal odour. A solution of the powder in caustic potash gave the usual tests for bile. The central cavity, probably, was occupied by a plug of mucus, around which fæcal matter was deposited.

The concretions were found in the pelvis, having passed through a perforation of the vermiform appendix.

Presented by Francis S. Worthington, Esq., 1881.

Other principal Specimens of Diseases of the Ileo-Cæcal Valve:--Nos. 2439, 2479, 2492, 2523.

Series XXIV. DISEASES OF THE RECTUM AND ANUS.

Hypertrophy : 2568, 2570, 2571.

Dilatation : 2569 to 2571.

Abscess and Fistula : 2560 to 2562, 2566.

Recto-vaginal Fistula : 2563, 2565.

Recto-vesical Fistula : 2583 to 2585, 2589.

Foreign body in the Rectum and in Fistulæ : 2564, 2569.

Ulceration : 2565, 2566, 2569, 2571, 2578, 2604, 2605.

Syphilitic : 2571 B.

Stricture : 2567 to 2571 A, 2565.

Syphilitic : 2571 B.

Morbid Growths:—

Warts : 2572.

„ Epitheliomatous : 2572 A.

Polypi : 2573 to 2577.

Nævus : 2578.

Cancer : 2579 to 2591, 2593.

Sarcoma : 2592 ?

Excision of the Rectum : 2593, 2571 A.

Diseases of the Blood-Vessels (Hæmorrhoids) : 2594 to 2603, 2562, 2565
2567, 2570, 2605.

Prolapsus Recti : 2604, 2605.

Substances passed per Anum : 2606.

Abscess and Fistula.

2560. The lower part of a rectum, with the anus. A bristle is placed in a small and short fistulous passage extending from the skin at the margin of the anus, and within the sphincter muscle, into the intestine just above its lower boundary. The adjacent mucous membrane is very vascular. *Hunterian.*

2561. Parts of a rectum, vagina, and perineum. Portions of whalebone are placed in a fistulous passage which has a small external opening near the margin of the anus, and extends upwards for an inch and a half by the side of the rectum, becoming wider as it ascends. At its upper part it opens abruptly into the rectum by a short and narrow passage, which is directed at a right angle to the rest of its course. The adjacent tissues are healthy. *Hunterian.*

The preparation is figured in Baillie's 'Morbid Anatomy,' fasc. iv. pl. 5. fig. 1.

2562. The lower part of a rectum, with the anus, at the margin of which are two large hæmorrhoids. A portion of porcupine's quill is passed through a small, round, ulcerated aperture in the coats of the rectum into a cavity external to it, which opens by a large aperture in the skin at the margin of the anus. The coats of the rectum are thickened and consolidated with the surrounding tissues. *Hunterian.*

2563. The female pelvic organs, inverted. About four inches from the anus a large ulcerated aperture through the walls of the rectum leads forwards by a narrow passage (marked by a piece of whalebone) into the vagina, and sideways by a wide canal into a large irregularly ulcerated cavity above and behind the broad ligament. The origin of this cavity is uncertain; its interior is in part flocculent, in part bridled, and all the tissues around it are hardened and confused. There is a prolapsus of the uterus and upper part of the vagina. The second of Houston's folds in the rectum is well shown. *Hunterian.*

2564. A small bone found in an anal fistula.

From a healthy middle-aged man. An abscess formed in one ischio-rectal fossa; it was opened, and a fistulous tract remained for six or seven months. On laying it freely open, the bone was discovered and removed; the tract closed entirely in a few days.

Presented by Sir William Fergusson, 1875.

Ulceration.

2565. A rectum, with a uterus, vagina, and other adjacent parts. The canal of the rectum is, through its whole length, contracted to about half an inch in diameter, and is surrounded by, and firmly united to, a large quantity of indurated cellular tissue and fat, by part of which it is unnaturally adherent to the posterior wall of the vagina. Nearly the whole of the mucous membrane of the rectum is superficially ulcerated, and its inner surface is smooth, hard, and without wrinkles. About an inch above the anus a circular aperture leads straight from the rectum into the vagina. Around the margin of the anus the skin is raised in prominent folds, as if by hæmorrhoids, and the orifices of the

sebaceous glands are very large. At the orifice of the vagina there are several ulcerated passages beneath the mucous membrane adjacent to the fistulous communication with the rectum.

Hunterian.

2566. A rectum, from the last four inches of which the mucous membrane has been removed by ulceration. The ulcerated surface is terminated above by an abrupt margin of healthy mucous membrane, and is remarkably smooth and hard. Above the ulcerated part the mucous membrane appears healthy; around it, the coats of the rectum and all the adjacent tissues are, as in the preceding specimen, exceedingly thickened, indurated, and confused; at one part they form a mass like a thick tumour surrounding the rectum, but they present no other character of cancerous disease. At the lower part, and extending for an inch above the anus, there are numerous short passages and cavities communicating with each other beneath small portions of the mucous membrane which extend like bridges over them. Some of these passages appear to have run deeply and irregularly into the thickened tissues around the rectum; none of them open through the skin.

The patient, a middle-aged man, had for some time before death been in the habit of using a rectum-bougie.

Presented by Sir William Blizard.

Stricture.

2567. The lower part of a rectum, the canal of which, about an inch from the margin of the anus, is suddenly reduced to half an inch in diameter by a deep annular fold of its mucous membrane. Above the fold the mucous membrane appears healthy; below it is excoriated; and in one place there is a narrow bridge of it, as if there had been an abscess external to it, or as if a bougie had pierced it. The tissues around the contracted part of the rectum are not manifestly diseased. There are several external hæmorrhoids at the margin of the anus.

From the Museum of Sir A. P. Cooper.

2568. Portion of a rectum, of which the canal is at one part suddenly reduced to less than a quarter of an inch in diameter by the thickening, induration, and uniform contraction of its walls. The stricture is half an inch in length, and terminates as suddenly as it commences. The intestine above the stricture is very much distended, and its muscular coat is hypertrophied; the part below it is small and atrophied. *Presented by Sir William Blizard.*

2569. A rectum and part of a colon, the blood-vessels of which have been minutely injected. Six inches above the margin of the anus there is a very close and narrow annular stricture of the rectum, produced by thickening and contraction of its coats and of the tissue immediately surrounding them. The inner surface of the stricture is ulcerated, and a small thin piece of fish-bone is sticking in it. Above the stricture the intestine is dilated to a diameter of nearly four inches, but its coats are not much thickened.

Presented by William Coulson, Esq.,

with the following history of the case:—

“I was requested to see a woman, aged 34, between four and five months advanced in pregnancy, who, three days before, had been seized with sickness, constipation, pain, and distension of the abdomen. These symptoms increased in severity, fæcal matter was rejected from the stomach, the abdomen became more distended, no evacuation could be obtained from the bowels, and the injections which were attempted to be thrown up the rectum were immediately expelled. Her powers gradually sank, and on the third day from the commencement of the attack she died.

“On examination after death, the colon was seen to be exceedingly distended, especially its descending portion, and about six inches from the anus a foreign body, believed to be a small portion of fish-bone, was found adherent to the lining membrane of the rectum, and pressed upon in this situation by the gravid uterus. Immediately below this body the bowel was completely closed, to the extent of half an inch, by the effusion of lymph caused by the presence of the foreign substance. There was no other morbid appearance.

“Prior to the attack which destroyed this patient, she was in her usual state of health and had no ailment whatever.”

2570. The lower part of a rectum, with the anus. On one margin of the anus are several large hæmorrhoids, and the skin for a considerable distance round it is excoriated. At the right

side of the anus is an appearance of a narrow granulating wound, as if a fistula had been there operated-on. Immediately above the anus the canal of the rectum is suddenly and irregularly contracted to half an inch in diameter, but without any apparent change in the structure of its mucous membrane. Above the contraction it is unnaturally dilated, its coats are thickened, and the tissues around it appear rather indurated and confused.

Hunterian.

2571. A rectum, with the urinary bladder and other adjacent parts. About two inches above the anus the canal of the rectum is gradually reduced to less than half its usual size by extensive thickening, induration, and contraction of the walls and of the tissues round them. They are all converted into a uniform pale, brawny, hard substance, like that of a cicatrix. This change and the stricture due to it extend for about three inches up the intestine. The mucous membrane lining the diseased part is superficially ulcerated; above it the intestine is greatly dilated, and its coats are thickened; below it is deeply wrinkled, but apparently not of unhealthy texture.

Hunterian.

The following is most probably the history of the case:—

“The Case of General Gage.”

“About the spring, 1785, General Gage consulted me. He complained of a sensation in the rectum, attended with a kind of difficulty in going to stool when costive, and often a desire to go when there was nothing to pass. I examined the rectum, and found, as far as I could reach with my finger, a hard contracted ring surrounding the gut. I then pronounced what the case was, and what would be the event.

“This hardness and thickening of the gut gradually increased, so as to make it difficult at times to pass the fæces, especially when costive. At last it occasionally became so difficult as to require the passing of bougies and hollow catheters, which one could always pass the lower stricture, but with difficulty passed the upper, which appeared to be three or four inches further up the gut.

“Clysters, purgative, sedative, and diluting, were occasionally thrown up; which sometimes had their intended uses. In this way he went on, sometimes better, other times worse, but upon the whole becoming worse. At last it became difficult to pass a bougie, catheter, or even to throw up an injection, and which was attended with very disagreeable symptoms for the time, as acidity

in the stomach, fullness, oppression, kind of hiccough, a vast rumbling in his bowels, and want of rest; but he got occasionally a passage, which gave him relief for a time.

“He was of course put on a very low diet, and such as was thought best to answer the purposes of diet, while producing the least quantity of excrements, as also such as tended as little to acidity as possible. This was animal food in all the forms he liked best.

“All this art probably kept him alive for a twelvemonth longer than he otherwise could have lived, for without this attention one or two costive days would have almost killed him, which I think I have often seen.

“What appeared to be very singular, the constitution did not, till the very last, seem to feel the disease or its consequences, for his pulse kept slow and regular, never in the least hard; and when signs of dissolution had taken place, the pulse was only weaker, but not irritable. At last nothing passing through the strictures, either downwards by stool or upwards by way of clyster. The belly became gradually fuller and fuller, which was principally air, as he towards the last took but little food, and which was easily known by the sound in patting on the belly. He became in some degree insensible to his own situation, and in some degree less sensible of pain, which increasing, he died in that kind of easy and insensible manner.

“On opening the body the colon was found very much distended with air through its whole length: its transverse arch made a quick turn down to near the pelvis, then up upon itself to the left side, and then down the left, forming the sigmoid flexion; from all which turns, viz. making four, and being considerably distended, it appeared to fill almost the whole belly.

“There was a good deal of fæces in the colon, but not in the least distending it.

“On putting the hand into the bottom of the pelvis was found a considerable tumour, which, with the bladder and rectum, was removed; but in this operation it was found that the tumour adhered closely to the hollow of the lower part of the sacrum, so as to be obliged to lay that bone bare in the removal of it.

“On slitting down the rectum, which was very large, it was found to be very much thickened in its coats, and of a hardish gristly texture, a good deal like the turtle’s intestines. This increase of thickness was to give it power to expel its contents.

“At the tumour the intestine contracted almost at once; and at its entrance into the tumour its inner coat was thrown into loose folds, so as to obliterate almost any appearance of a passage there: however, I could easily pass the end of my finger into it, those folds easily giving way. The tumour was next slit through, which showed a firm increase of the gut, near an inch thick all round, and for three inches in length. At the lower part it terminated all at once into the sound gut, which we had often felt when alive. The inner surface had lost entirely its natural appearance; was slightly rugged, so as to appear like villi.

“On introducing the pipe by the anus it was found to come butt against one side of the upper part of the cavity of the tumour, where there was a bend in its passage: but why a crooked pipe did not pass when attempted to be passed by turning it to all sides, I cannot conceive. Or, why a bougie which was slightly bent, did not hit the hole, is not easily accounted for; but what is more extraordinary than either, why a clyster did not pass freely up; or why did not the wind or soft excrements, that did yet lay, pass pretty readily down, while I could pretty readily pass the end of my finger down from the gut above into the tumour. The folds of the contracted part did not appear after death to have been sufficient for an entire stoppage of this kind.”
—*Hunterian MS., Cases and Dissections*, No. 59.

- 2571 A.** A portion of a rectum, the seat of a stricture, which was excised. The bowel is much narrowed and its walls are thickened.

From a woman, aged 34, who had suffered from symptoms of stricture of the rectum for eight years. Dilatation by bougies proved of no permanent benefit. The stricture was hard, annular, admitted the tip of the finger, and was situated two inches above the anus. It was excised through an incision between the anus and coccyx, and the divided edges of the bowel above and below were united by sutures. The patient recovered from, and was much relieved by the operation. (See ‘*Lancet*,’ vol. i. p. 512, 1879.)

Presented by Dr. David Lowson, 1880.

- 2571 B.** The lower part of the large intestine of a woman, with the internal generative organs. At the upper part of the specimen is a portion of the integuments of the loin, adherent to the descending colon, and with an opening into the bowel made in the operation of colotomy. The rectum, especially at its lower part, is much thickened and contracted, and its mucous membrane is replaced by cicatricial tissue: at the part adjoining the sigmoid flexure are two large superficial ulcers with cleanly-cut regular edges. The mucous membrane of the sigmoid flexure appears thickened and is much folded. The disease shown in Nos. 2565 and 2566 is probably of the same nature.

From a woman, aged 25, who suffered from syphilitic disease with stricture of the rectum. A rectal abscess opened on the buttock and produced suppuration of the hip-joint. She died exhausted, some time after the performance of colotomy.

Presented by Thomas Bryant, Esq., 1874.

Morbid Growths.

2572. The lower part of a rectum with a thick ring of lobed and nodulated warts completely surrounding the anus.

2572 A. A papillary epithelioma removed from the margin of the anus. It is two inches in diameter, and its surface is covered by numerous deeply divided lobules and foliaceous projections.

Under the microscope the base of the tumour showed columns of epithelium traversing the section in various directions. The outer cells of the columns were elongated and columnar; the middle zone was composed of spheroidal pavement-cells which, for the most part, had become vacuolated; and the central cells were fused and cornified, but their nuclei remained distinct.

Presented by John Gay, Esq., 1883.

2573. A small lobulated vascular polypus which was attached to the mucous membrane of the rectum by a narrow pedicle.

From a lady aged 51. It was situated about one inch and a half within the sphincter.

Presented by John Hilton, Esq., 1867.

2574. A large lobulated and nodular tumour from the rectum. The lobules vary in size, and their surfaces are studded with closely set papillæ, giving to the whole a villous appearance. No well-marked peduncle is visible. The tumour is composed chiefly of cylindrical epitheliur

From a coachman aged 61, fairly nourished but sallow. He had passed blood per anum for three years, and had suffered some pain for a year and a half. In twelve months a tumour had presented itself during defæcation, which was at first easily reducible. It had increased rapidly for six months.

Presented by Sir William Fergusson, 1870.

2575. Several small polypi from the rectum. They are composed of villous processes of cylindrical epithelium, and

show numerous spaces in them, which are lined by similar elements.

They were removed from the lower end of the rectum of a lad aged 17. He recovered from the operation, but a digital examination of the bowel showed that the whole mucous membrane was the seat of similar excrescences. He ultimately died, and on an inspection of the body the whole of the upper part of the rectum and lower part of the colon were involved in a mass of growths similar to that removed at the operation.

For drawings see MS. Notes, vol. i. p. 368.

Presented by Henry Smith, Esq., 1872.

2576. A polypoid growth from the rectum. It is composed externally of a thick horny layer of pavement epithelium and alveolar tissue within. In its centre are many blood-vessels of considerable size.

Presented by T. Blizard Curling, Esq.

2577. A papilliform rectal polypus, consisting of numerous small lobules with rather long stalks, forming a mass which was attached to the mucous membrane by a thin peduncle.

It was removed from the rectum of a boy about 15 years of age, who had suffered from a feeling of distress in the rectum for many months. The polypus had frequently descended and been returned.

Presented by Sir James Paget, 1876.

2578. A section of a rectum. The mucous membrane of the lower four and a half inches of its length is much thickened and the seat of a cavernous nævus. The section shows a spongy structure dotted with innumerable small and some large vessels. Near the upper part of the growth is an ulcer with an even base and sharply cut edges.

From a fine, otherwise healthy man. Since boyhood he had frequently to strain in defæcation, and at such times passed blood. The attacks were occasionally separated by a period of three or four years. He came under treatment on March 13th, 1882, with profuse diarrhœa and hæmorrhage. Various remedies were tried unsuccessfully, and he died with hæmorrhage on May 5th. The condition of the rectum was diagnosed by inspection, when three flat ulcers were seen, from which blood flowed. (See Med.-Chir. Soc. vol. lxi. p. 229, 1883.)

Presented by Arthur E. J. Barker, Esq., 1883.

"Cancer of the Rectum."

The intestinal canal is subject to many diseases, some of which produce a contraction of the gut at the diseased part, and which produces one set of symptoms common to stricture. The two most common diseases which produce this one effect, viz. contraction, are the cancer and that disease which produces a contraction of the parts. The seat of both these complaints may be anywhere in the track of this canal; but they are more commonly in the rectum than in any other part of it*, and which is most commonly just within the reach of the finger when passed by the anus.

This effect of these two diseases is commonly known to the patient before examination by the smallness of the stool when of a proper consistence; and often it is of various shapes—as, pressed on one side, grooved or flattened, but always of a diminished size.

These two diseases should be well distinguished from one another; for by producing one effect common to both, they are often not considered beyond or further than this common effect, and, of course, often treated very improperly; for if it is a stricture, and is supposed to be a cancer, it then may be neglected as a stricture, and the patient allowed to die; while he might have been cured or relieved, although at the same time the case treated properly under such a supposition: and on the other hand, if supposed to be simply a stricture while it is a cancer, then too much may be done, as I have more than once seen.

As we are to distinguish the cancer from a stricture, it is also necessary we should distinguish a cancer from internal piles. However, the first signs of a stricture hardly take place in the piles. A cancer commonly comes on more slowly than the piles: the seat of the symptoms of the piles is lower, having more immediate connection with the act of going to stool, being worse when purging, also coming out in the act of expelling the fæces; and they will be different in the feel when examined by the finger.

In the cancer the gut, at the diseased part, is extremely hard, with irregularities projecting into it, sometimes only on one side, often all round, extremely sore to the touch, great pain in going to stool, and often very sore at other times. Ulceration takes place on the inner surface, which is surrounded with those irregular projecting edges, one above the ulcer and one below, the lowest of which, if near enough, can be felt with the finger,—feeling, when the disease goes all round, something like a hard indurated os tinctæ. This ulceration more or less extends the disease for some way on the gut, and makes the two projecting edges act, as it were, like two valves, one made by the upper pro-

* The pylorus is very often the seat of the cancer.

jecting irregular edge of the ulcer, the other the lower; and which makes the fæces pass with still greater difficulty, especially the upper one.

The internal piles are commonly not placed so high as the seat of the cancer, and are therefore as low as to affect immediately the operation of going to stool, and often pushed out in that operation, and can hardly be returned. To the feel of the finger they are risings irregularly situated in the gut, just at the sphincter, very seldom so hard as the edges of the cancer, and the gut soft at the other places.

However, in some internal piles of long standing I have felt them very hard, as also the gut very firm in texture, but such were of too long standing to be cancerous; and there is a distinguishing mark, which is hardly to be described by words.

In the cancer nothing is to be done but to keep the patient as quiet as possible by opiates, &c.; but opiates commonly cause a costiveness, which is to be avoided; therefore mild laxatives, or clysters of warm water, must be administered as often as occasion requires.

It often happens in a cancer of the gut, especially in the rectum, that towards the last the patient is attacked with a tympanites, the colon shall become extremely distended, so as to distend the abdomen and give great uneasiness. This is known from want of undulation and the sound the part makes on being struck with the finger.

A cancer in the intestine seldom kills of itself: it most commonly kills by producing some other disease, which produces more immediate mischief. Thus, by retaining the fæces and the wind, it often kills when the patient might have lived longer from the cancer alone; and therefore the treatment of cancer in the rectum is [or concerns] not so much the disease itself as the effects it has as a stricture on the bowels above, and therefore the relief is to be administered to them. But the cancer in the rectum often kills by wearing out the constitution, producing hectic. Opiates are what must be had recourse to, but they must be joined with purgatives, as costiveness will destroy of itself. Clysters of opium will give relief, which being joined with water will not so likely render them costive as when taken by the mouth.

In those cases there is often a total stoppage; as this often happens long before the disease has reduced the patient to the last stage, the patient must be relieved. As this is often mechanical, opiates or any other sedatives cannot produce any good effect, or remove the cause; therefore something mechanical must be attempted. A bougie may be attempted, but it (the canal) will often close again upon withdrawing it; therefore often obliged to have recourse to a pretty large catheter open at the end, which is stopped by a projecting plug for its easy introduction, and then to be withdrawn when introduced through the cancer. This instrument must be continued considerably beyond the lower irregularity felt by the finger, for it is commonly the upper irregu-

larity that makes the stricture, acting like a valve ; therefore must go through the upper one, which is going beyond the intermediate ulcer ; and the distance of the upper must be ascertained by the flowing of the contents of the gut.

As it is often very difficult to introduce this instrument, it may be often proper to leave it in for some time ; for great caution is absolutely necessary to be used in such cases, for violence or irritation of any kind does great mischief to the diseased part.

The few strictures [without cancer] I have felt appeared to me to be only a contraction of the gut, and according to the contraction my finger could be introduced. The gut felt soft, no hardness, and not attended with pain, except when passing a costive stool.

I have been just able in some cases to introduce the tip of the fore finger : it has apposed [appeared ?] to the feel so much like a quick contraction of the gut, that I have conceived it might be divided with a cutting instrument.

The stricture of the rectum [without cancer] can only be treated as a stricture in the urethra, by being dilated with bougies made on purpose ; their necessary thickness may be determined by the finger, as also their length.

They will admit of being treated like a stricture in the urethra, and therefore recourse to the bougie must be had. The bougie in common for such complaints need not be above four or five inches long, as that will probably go as high as we can ascertain the disease to be a stricture and its situation, and possibly as high as we can conveniently pass one. Their thickness must suit the size of the contracted part. Probably the stricture may have become so close as not to admit the point of the finger before they have applied for relief, which I have felt.

A bougie about five inches long and half an inch thick at the thick end, tapering very gradually to the other, may, in common, be of a proper size ; and these must be left in as long as the sensibility of the parts will admit, and their frequency to be guided by the same rule, till sufficiently dilated, which will be known by the patients themselves ; but as this practice will be attended with considerable inconvenience, the patient will be apt to leave it off upon the least amendment ; therefore it may be proper to keep them longer than they otherwise would. As it is a disease, too, that will be apt to recur, the patients should be put on their guard, and have recourse to the bougie occasionally.—*Hunterian MS. : Cases and Observations.*

2579. Part of the rectum of an Ox, with a section of a large cancerous tumour growing between its coats and projecting far into its cavity. The tumour appears to have been developed in the submucous tissue, for at its upper part a thin layer of mucous membrane is continued over its surface. The fasciculi of the circular fibres of the muscular coat are

separated at the base of the tumour ; they are also elongated, and many of them appear to be continued for some distance into its substance. The tissues external to the muscular coat are thickened and consolidated. The lower part of the tumour has sloughed and is deeply ulcerated. *Hunterian.*

2580. The other part of the same rectum with a similar section of the tumour. *Hunterian.*

2581. A rectum and part of the colon. A tight stricture of the rectum has been occasioned by the growth of a cancerous mass of fibrous appearance, which has greatly thickened the wall of the bowel and filled the space between it and the bladder. Colotomy has been performed in the loin, and the skin surrounding the artificial opening and the sutures connecting it to the bowel are preserved.

Presented by Richard Partridge, Esq., 1867.

2582. Portion of rectum with a broad, slightly elevated, soft, and spongy cancerous growth in its mucous membrane. The surface of the growth is flocculent and shreddy ; its texture gradually merges into that of the surrounding healthy mucous membrane ; at one situation it is smoothly ulcerated. The growth occupies nearly the whole circumference of the intestine. *Hunterian.*

2583. An antero-posterior section through a bladder and rectum, and a soft cancerous growth occupying the interspace between them. The tumour, which originated in the wall of the rectum, is three inches across and contains alveoli filled with gelatinous material and bounded by bands of fibrous tissue. The anterior wall of the rectum is penetrated by ulcers, at the base of which the growth is exposed. A portion of the trigone of the bladder is destroyed, but the prostate gland is unaffected.

Microscopically the tumour showed the usual appearances of cancer of intestine. Alveoli of varying size and shape were filled with small nuclei of epithelial cells, having in some instances a marginal layer of columnar cells. The stroma was dense, fibrous, and rich in nuclei. The nature of the gelatiniform change could not be observed.

From a man, aged 41, who, twenty years before death, had prolapsus ani with a growth in the bowel, of which small pieces were removed. During six or seven months preceding death he suffered with difficulty in defæcation and the discharge of blood and muco-pus from the anus. He sometimes passed flatus through the penis, and the urine contained blood and pus. Part of the growth was removed. Death took place suddenly, after colotomy, with pulmonary embolism. The growth began five inches from the anus, and extended five inches upwards.

Presented by Dr. J. F. Goodhart, 1883.

2584. Portion of a rectum with the urinary bladder and other adjacent parts. At the level of the prostate gland, and extending for nearly three inches upwards, is a deep irregular ulcer, much like No. 2852, which has destroyed the greater part of the walls of the rectum, and near its centre has penetrated the urinary bladder, forming an aperture through which a piece of bougie is passed. External to the rectum, the tissues adjacent to the ulcer are indurated and contracted. Around the aperture in the bladder, which is situated in the middle line just above the ureters, there is a flat soft tumour, nearly two inches in its greatest diameter, of an obscurely fibrous structure; and an inch higher on the wall of the bladder is another tumour of similar aspect, but of smaller size. With these exceptions the bladder appears healthy. *Hunterian.*

2585. A rectum and bladder, between the cavities of which a wide communication has been formed by cancerous ulceration. The apertures in both organs are ragged, shreddy, and irregular. A growth, apparently of a carcinomatous nature, extends into the posterior part of the bladder; and a similar growth occupies one side of the rectum and nearly fills its cavity. The posterior wall of that part of the rectum which lay in the hollow of the sacrum is nearly destroyed.

Presented by Sir William Blizard.

2586. Parts of a rectum and of some of the adjacent organs. Rather more than an inch above the anus, a broad transverse band of deep ragged ulceration has destroyed the mucous membrane of the rectum. The margins of the

ulcer are elevated, and partly covered with flocculent and leaf-like cancerous (?) growths. Above and below the ulcer, the surface of the mucous membrane is wrinkled, seamed, and depressed, and around it all the tissues are thickened, indurated, and confused. The prostate gland and neck of the bladder are closely adherent to the exterior of the rectum opposite the ulcerated part.

The patient died with great distension of the intestines; and the fæces could not be discharged, though the canal of the rectum was not much contracted.

Presented by Sir William Blizard.

2587. A portion of rectum, on the inner surface of which is a large shaggy cancerous ulcer. The central part of the ulcer has penetrated through the rectum deep into the tissues which are adherent and condensed around its posterior wall. The coats of the intestine are thickened and indurated. *Hunterian.*

2588. The rectum of a patient of whose case Mr. Hunter left the following record :—

“ The case of the Bishop of Durham, with the appearances after Death.

“ His Lordship had, about ten years ago, the piles, for which he took Ward’s Paste, and was cured. Near ten years after (probably about the year 1790), he was taken with a complaint in the anus; blood and slime came away with his stools, which often passed with great difficulty, especially when costive, and often attended with considerable pain in the part. The loss of blood was so considerable at last as to appear in his countenance.

“ In the summer, 1790, he became extremely debilitated, loss of appetite, want of rest, quick pulse, and his legs began to swell. Dr. Blane attended him, and Dr. Warren was called in. As the symptoms attending the stools expressed considerable disease somewhere in the gut, and as the pain expressed it to be in the rectum, it was proposed he should be examined, and Mr. Earle was applied to, who examined him with the finger, but could not find anything uncommon. I was next sent for (I think, in August), and immediately, upon introducing my finger up the rectum, near three inches, I felt a rising, forming a ridge, which went round the gut obliquely, like a ring, was harder or firmer in consistence than the other parts; over which I could just pass my finger.

“ This was so familiar a feel to me, that I at once pronounced it to be what is commonly called a cancer. Opiate and cicuta

clysters were given, to keep the parts in as easy a state as possible; and such food and medicines as the effects of the disease had on the constitution were thought proper for, without attempting a cure, were administered, and the disease went on.

“Dr. Hugh Smith was called in; and when I told him what I felt upon examination, and what my opinion was of what I did feel, he then gave up hope of being able to do any good. However, upon a supposition that I might be deceived, and as he had seen great good from mercury in diseases of the rectum, in what he conceived to be pile-cases, he ordered Ward’s White Drops; but, after a short trial, it disagreed with his stomach, and he left it off for that time. Upon the leaving off this medicine he became rather easier, less blood and slime came away, and the swelling in his legs abated; but as he was then taking nothing, no particular stress was laid upon it by himself or friends, and, as I did not suppose it possible for him to get well, no stress was laid on it by me. This, however, lasted about ten days; and it was this time when the family were importuned to have Taylor the cattle-doctor to attend him, and I was asked to examine this doctor, to see whether it was likely he should do mischief or not. Upon examination it appeared to me that his medicines could do no harm, and he sent his medicines, which I was desired by the family to apply according to the account or mode given by Taylor. This was done accordingly, and now great attention was paid to the ease or abatement of the symptoms; which still continuing, the mind of the patient, as well as those of his friends, forgot the former ten days, and dated the time of ease from the application of Taylor’s medicine.

“Taylor was now informed of what had been done; he went on for about two months, taking occasionally opium as much as the symptoms seemed to require; so that opium was not objected to as interfering with his medicine. The ointment introduced into the anus was now left off, and only the sacrum and loins rubbed with a liquid, which appeared to be oil of origanum dissolved in spirit of wine, and this he went on with for many months. All this time the accounts we had of his health were that he was better, sometimes that he was cured, &c.

“Most of this time his appetite was certainly better, slept better, his excrements passed easier, less blood and slime, although there was often a good deal of both. With all these accounts of his recovery, yet he did not get flesh, although he and they were in hopes he did; for the confirmation of which his barber was applied to, who thought it was necessary he should say he thought his cheeks plumper. He became so weak at last as to be hardly able to sit, and fell off his night-table and bruised himself; and about eight or ten days after he died, which was in May 1791, about ten months after I saw him.

“*Of the appearances upon opening the body of the Bishop of Durham.*

“On examining the contents of the abdomen, the whole viscera

or contents of that cavity were perfectly sound; but the parts below, contained in the pelvis, where the symptoms were when living (viz. the last bowel), were in a diseased state.

"The whole inner surface of that bowel, from within an inch of the external parts to about five inches up, made one broad ulcer, terminating in a ridge below, as also at the upper part; and the ulcer between these two ridges was ragged and spongy.

"On that surface of the gut next to the bladder the gut was entirely gone, being ulcerated away, and the bladder on that side exposed. And it had likewise ulcerated higher up the gut, where there was no natural union of parts, and of course would have communicated with the cavity of the belly, if some adhesions had not taken place above, which prevented the contents of the bowels getting into that cavity, which would have proved fatal in a very short time. The surrounding parts of this ulcer were hard, or what is commonly called callous, almost as hard as gristle, by which means the gut was firmly attached to the surrounding parts.

"These appearances were the only diseased parts; for in other respects I never saw one more free from disease. That they had increased is evident; for when I examined his Lordship last the lower edge of the ulcer was near three inches high, but now it was hardly an inch; and we may suppose the upper ridge also went higher.

"His Lordship at first, as has been observed, had great difficulty in passing his stools, which was owing to these two ridges being nearer to each other, and higher or thicker; but as ulceration went on, or as it spread, these parts were removed, so that the intestine here, instead of being contracted as at first, was now enlarged, so that the contents of the bowels came away more easily, which was very conducive to his Lordship's ease.

"As there were no lymphatic glands diseased, how far was this disease to be reckoned cancer?"—*Hunterian MS. : Cases and Dissections*, No. 58.

2589. Portion of a rectum, with the urinary bladder and other adjacent parts. For about two inches above the level of the prostate gland, nearly the whole of the walls of the rectum are destroyed by an ulcer, which has an abrupt sinuous margin, and parts of the walls of which appear to be formed of masses of soft cancer. Its base is formed of the tissues between the bladder and rectum, thickened and indurated; but it has at one part extended into the bladder by an aperture (indicated by a piece of glass) between the ureters. Above the disease the rectum is greatly dilated.

From the Museum of John Howship, Esq.

2590. A rectum, with part of the colon, the uterus, ovaries, and other adjacent parts. Between four and five inches from the lower border of the rectum there is a large and deep circumscribed ulceration of its coats, the consequence of cancer. The canal of the intestine at this part is much contracted, both by the disease of its coats and by the growth of large cancerous tumours around it. The right ovary is enlarged so as to form a cyst nearly three inches in diameter, which is filled with soft medullary matter. The left ovary and uterus are healthy; as are also all the coats of the intestine both above and below the circumscribed ulceration already described.

The patient was an unmarried woman, 42 years old, who had signs of disease of the rectum for nearly three years before her death. Shortly before her death rupture of the cæcum took place, in consequence of the distension produced by the fæces, which had been for a long time accumulating above the diseased part of the rectum. A more detailed history of the case is given in Mr. Langstaff's Catalogue, p. 252.

From the Museum of George Langstaff, Esq.

2591. A portion of rectum, inverted. Its mucous membrane, through six inches of its length, and in its whole circumference, is completely covered with close-set, fine, branching filaments, so that it looks like the flocculent surface of a chorion. The filaments are from a line to half an inch in length: the adjacent mucous membrane, and that to which they are attached, appear healthy. At one part there is a large irregular aperture in the wall of the intestine, but it has the appearance of having been torn rather than ulcerated.

From a person who had an artificial anus in the left groin for thirty years before he died. It had formed in consequence of the mortification of a hernia of the sigmoid flexure of the colon; and the end of the intestine below the artificial anus was completely closed, so that for thirty years no fæces had passed through the rectum. The disease which is shown in the preparation appeared, however, to be the chief cause of death. The artificial anus is preserved in No. 2730.

Presented by Sir William Lawrence.

2592. A large, soft, lobulated tumour from the anal region of a Dog. It is composed of round cells, and appears to be of the nature of soft sarcoma.

Presented by Edwin Duke, Esq., 1876.

Excision of the Rectum.

2593. An anus, with a portion of the lower end of the rectum, which was excised for epithelioma involving the anus. About an inch and a half of the length of the bowel has been removed, and the cut edges appear free from disease.

Presented by John Gay, Esq., 1878.

Hæmorrhoids.

2594. "A pile" [*Hunterian MS. Catalogue*]. One surface of the specimen exhibits the mucous membrane of the rectum: from the other all the tissues have been removed, so as to expose numerous small varicose dilatations of the branches of the hæmorrhoidal veins, some of which have firm round clots of blood within them. The dilatations of the veins are so partial, that, as the undilated portions by which they communicate are not all exposed, many of them appear like isolated sacs containing clots of blood. *Hunterian.*

2595. A circle of external hæmorrhoids, removed during life from the margin of an anus.

Referring to this preparation, and probably having in view the careful dissection shown in that last described, Mr. Hunter wrote the following:—

"Observations on Piles.

"The piles would appear to be principally increased veins or varicose veins, making, from their enlargement, a body somewhat similar to the glans penis, or plexus retiformis; but, as the piles are a disease, they of course differ in every other respect. The motion of the blood is not so free through them, owing to the contraction of the sphincter ani; therefore they are not so compressible, and which often makes them extremely hard. But the most singular thing is, the blood often coagulating in them."—*Hunterian MS.: Cases in Surgery*, p. 443.

2595 A. The lower end of a rectum, with the margin of the anus.

A prominent transverse fold of the mucous membrane of the rectum, an inch and a half in length, and half an inch above its anal margin, has been produced, probably, by hæmorrhoidal enlargement of the subjacent veins. All the dilated veins here cut across are filled with hard and compact clots of blood. The whole margin of the rectum is thrown into a fold like that above mentioned, but thinner and less prominent.

Hunterian.

2595 B. The lower part of a rectum and an anus, of which the veins have been injected and dissected out. Just within the anal opening is a ring of internal piles, which have been laid open; some of them are injected, but others are completely filled with blood-clot.

Presented by John Gay, Esq., 1881.

2596. The structures around an anus. Large internal piles protrude from the anus; their surface has become corrugated through the action of spirit. At the back, the muscular coat of the rectum is seen in section; it is hypertrophied. There is a firm clot in the submucous coat; in the midst of this clot is an open vessel, into which a red glass rod is passed. The rod external to the circular muscular fibres marks the position of a phlebolith partly embraced by the fibres.

From a woman, aged 58. She had long been subject to hæmorrhoids, increased by the pressure of a large ovarian cyst. This was removed. The next day the hæmorrhoids were found inflamed, protruded, and very painful; they remained so till her death on the third day.

Presented by Alban Doran, Esq., 1880.

2597. A series of transverse sections of a rectum, in order from without inwards, the mucous membrane of which is affected with internal hæmorrhoids. The mucous membrane is raised into large thick folds, and in the submucous tissue are seen the sections of large vessels filled with coagulum.

From a Dissecting-room subject, 1867.

2598. The lower part of a rectum, with large hæmorrhoids around the margin of the anus. The hæmorrhoids are nearly separated into two rows (the smaller ones lying above the larger) by a constriction extending round the rectum at the situation of the lower margin of the sphincter ani. The upper row are internal, the lower external piles.

Hunterian.

2599. The lower end of a rectum, exhibiting numerous minute circumscribed depressions, perhaps ulcers of its mucous membrane, and fringes of minute growths. Below this, and near the anal margin, the mucous membrane is raised in several prominent longitudinal folds by hæmorrhoids; and below these, separated from them by a constriction like that above mentioned, there is another row of smaller external hæmorrhoids at the very margin of the anus.

Hunterian.

2600. Part of a rectum and an anus, the margin of which is surrounded with hæmorrhoids.

Hunterian.

2601. The lower end of a rectum, with the anus, the margin of which is surrounded with hæmorrhoids. Above the hæmorrhoids the mucous membrane of the rectum is ulcerated and irregularly wrinkled; elsewhere it is healthy.

Hunterian.

2602. The lower part of a rectum, with the anus. The coats of the rectum are thickened and consolidated with the surrounding structures. Its cavity is contracted, and is further reduced by prominent folds of mucous membrane, which probably cover hæmorrhoidal enlargements of its veins. Around half the margin of the anus are hæmorrhoids covered with thin and slightly excoriated skin.

The patient had continual diarrhœa.

Hunterian.

2603. The lower part of a rectum, with hæmorrhoidal tumours both within and beyond the margin of the anus. Part of the mucous membrane between and upon the hæmorrhoids is ulcerated and ragged; two inches above the anus also is

an oval aperture, with smooth thin margins, leading through the mucous membrane into a small cavity between it and the muscular coat. The cut edges of the preparation exhibit sections of clots of blood in the dilated parts of the hæmorrhoidal veins.

Hunterian.

Prolapsus Recti.

2604. An anus with an inversion and protrusion of the rectum three inches long. There are numerous irregular superficial ulcers of the mucous membrane of the inverted portion of the rectum, and both this portion and that which was protruded appear to have been very vascular.

The disease had existed a long time, in a woman fifty-two years old.

From the Museum of John Howship, Esq.

2605. The rectum, anus, uterus, and other adjacent parts of an old woman. A considerable portion of the rectum is inverted and protruded through the anus, forming a tumour of nearly hemispherical form between three and four inches in diameter. The mucous membrane of the rectum is thickened and extensively ulcerated. The margin of the anus is surrounded with hæmorrhoids, some of which are large and pedunculated. There is also some degree of prolapsus of the uterus with inversion of the vagina.

From the Museum of Robert Liston, Esq.

Substances passed per Anum.

2606. Three blood-clots, passed per anum. The surfaces of the clots are smooth, and the edges are rounded as if they had been moulded in some pouch of the intestine or bladder. No casts of follicles are visible on the surfaces.

Microscopically they consisted entirely of blood-clot, and a few epithelial cells were visible.

From a patient, aged 58, suffering from cancer of the rectum, which communicated with the bladder.

Presented by Henry Lee, Esq., 1872.

Other Specimens of Disease of the Rectum are:—Nos. 2482, 2721, and 2722.

Series XXV. ANATOMY OF HERNIÆ, OR RUPTURES AND OTHER DISPLACEMENTS OF THE INTESTINAL CANAL AND OMENTUM.

ANATOMY OF HERNIÆ IN GENERAL.

Of the Hernial Sac: 2607 to 2641.

Ordinary form of the Sac: 2607.

Thickening of the Sac: 2607.

Thickening of the Neck: 2608.

Closure of the Neck: 2609.

Hourglass and pouched Sacs: 2610 to 2612.

Septa on wall of Sac: 2613.

Two or more distinct Sacs: 2614, 2616.

Of the Contents of the Sac: 2617.

Adhesion of Contents to Sac: 2618, 2619, 2628, 2629, 2635, 2670, 2675, 2687.

Thickening and induration of the Omentum: 2617 to 2620, 2675.

Effects of Strangulation:—

Gangrene of Omentum: 2621.

Constriction of Intestine: 2622 to 2626.

Congestion &c.: 2627 to 2629.

Perforation and sloughing of the Intestine: 2630 to 2632, 2611, 2683, 2688.

Rupture of the Intestine: 2633.

Unusual Contents of Herniæ: 2634 to 2641, 2673, 2730.

Substances lodged in Herniæ: 2636, 2645.

Occasional Results of Taxis:—

Rupture of Intestine: 2642.

Reduction *en masse*: 2643, 2644, 2616.

Displacement of the Neck of the Sac: 2645.

ANATOMY OF THE PARTICULAR FORMS OF HERNIA.

Inguinal Hernia: 2646 to 2672.

Anatomy of, and the Coverings of the Sac: 2646 to 2653.

Complete Oblique Inguinal Herniæ: 2646 to 2659, 2611, 2616, 2618 to 2620, 2634 to 2636, 2638, 2643 to 2645, 2653, 2675.

Incomplete: 2660, 2661, 2614, 2636.

Direct Inguinal Hernia: 2662, 2637.

Separation of the Constituents of the Cord: 2650, 2654, 2664.

Complicated with Hydrocele: 2663 to 2665.

With Varicocele: 2666, 2667.

Hernia into the Vaginal Process of Peritoneum, or Congenital Hernia : 2668 to 2672.

Hernia into the Funicular portion of the Vaginal Process : 2672.

Femoral Hernia :—

Anatomy of, and the Coverings of the Sac : 2673 to 2677, 2614, 2653 2679.

Unusual Distribution of the Arteries in Inguinal and Femoral Herniæ 2678, 2679, 2654, 2660, 2675.

Umbilical Hernia : 2680 to 2688.

Intra-parietal : 2686.

Obturator Hernia : 2689.

Herniæ in Animals : 2639 to 2641, 2671.

INTERNAL STRANGULATION : 2690 to 2696.

By fibrous bands and adhesions : 2690 to 2694.

By diverticula and fibrous bands, the remains of the omphalo-mesaraic duct : 2695, 2696.

INTUSSUSCEPTION : 2697 to 2726.

Of the Small Intestines : 2697 to 2702.

Of the Small and Large Intestines : 2703 to 2710.

Of the Large Intestines : 2711.

Protrusion or Evacuation of intussuscepted Intestine from the Anus : 2712 to 2716.

Union of the Intestine after separation of an intussuscepted portion : 2717.

Intussusception, with Tumour of the inverted bowel : 2718?, 2719 to 2722.

Intussusception in Animals : 2723 to 2726.

ARTIFICIAL ANUS AND FÆCAL FISTULA : 2727 to 2735; 2636-2637.

After Herniotomy : 2727 to 2730.

After Wounds of the Abdomen : 2731.

After Colotomy : 2732, 2733.

After Abscess : 2734, 2735.

ANATOMY OF HERNIÆ IN GENERAL.

Of the Hernial Sac.

2607. An inguinal hernia, in which both the sac and its coverings are thickened and indurated ; they are partially separated into layers ; together, they are from one-sixth to one-fourth of an inch in thickness ; the interior of the sac is corrugated and soft films of lymph are deposited upon it. The testicle

is placed below the sac ; the surfaces of the tunica vaginalis are adherent together and consolidated with the surrounding tissues.

From the Museum of Robert Liston, Esq.

2608. "The internal orifice of a hernial sac, to show its valvular appearance" [*Hunterian MS. Catalogue*]. The appearance is due to an annular thickening of the peritoneum nearly limited to the margin of the mouth of the sac, which is thus reduced to a much less diameter than any other part of the sac.

Hunterian.

2609. The sac of a femoral hernia, with some of the adjacent parts. The sac is uniformly thickened, and its neck is closed ; a layer of tissue, nearly half an inch in thickness, intervenes between the part of the sac which remained as a closed cavity in the groin, and the depressed and wrinkled peritoneum lining the internal orifice of the crural canal.

From the Museum of Robert Liston, Esq.

2610. An inguinal hernia, of which the sac is contracted at the middle, so as to be nearly divided into two parts. Both its cavities contain omentum.

Mr. Hunter left the following account of this preparation :—

"*Winter, 1763.*—We dissected a man who had a rupture of a particular kind, a sort of double rupture on the same side, and in the same passage, and in the same sac. It appeared to me as if produced at two different times: that the man had a small inguinal rupture for some time, the contents epiploon, and that the mouth of the sac had contracted a good deal, so that no return of the epiploon could be brought about. While in this state a second or new cause took place ; and instead of dilating the old sac, by pushing into it more epiploon, it pushed down the old sac, and a new elongation of the peritoncum followed ; so that here was a kind of second rupture produced. This last was by much the largest.

"It appeared at first to be two distinct bags ; but there was the first contraction of the sac which kept up the communication between the two : and the epiploon passing through, forming a small neck there."—*Hunterian MS.: Dissections of Morbid Bodies*, No. 71, p. 101.

See also the description and history of No. 2614.

2611. The sac of an inguinal hernia, with the adjacent parts and a portion of small intestine which, probably, was returned in an operation. The intestine (suspended above and separate from the sac) appears to have been constricted in only a part of its circumference, and has mortified; there is a considerable aperture in its coats, surrounded with thin flakes of lymph. The sac, of bilocular form, is contracted; all the tissues around are thickened and consolidated with it, and it is lined with lymph. The external ring has been divided, and a ligature tied on something at its side.

The following case from the Hunterian MSS. corresponds closely with this preparation:—

“Hernia.

“Mr. Roberts, watchmaker, had an inguinal hernia for many years, and wore a truss. It became so well that he often left the truss off.

“Tuesday, July 1774, he was attacked with a vomiting, and a protrusion took place, with all the signs of a strangulated gut, although not very violent: for, although sick at stomach, he did not vomit. On Wednesday I saw him; no passage by stool could be procured. The appearance was very small, only about the size of the end of the thumb, which terminated all at once; but from that downwards the spermatic chord seemed thickened. The parts were so tender that he could hardly allow one to touch them. It did not give way to any of our attempts.

“On Thursday, much the same; the pulse kept strong.

“On Friday I thought I had returned the part, for it had lost the sudden termination at the lower part, and only appeared to be a thickening of the spermatic chord, and thought we could feel the ring open and free. I imagined that I could get in my finger for a little way. The pulse kept strong, but he was extremely ill all day, and had no passage.

“In the evening the pulse had lost considerably of its strength; was become small and quick: he was much oppressed. It was now plain that all was not right respecting the rupture, and I was now for performing the operation; but he declined it.

“I saw him at six o’clock, found him very low, his hands extremely cold, and alarming pulse, hardly to be felt; and but little pain in the part even upon pressure; and he could hardly draw his breath, excepting when he did it by force.

“Mr. Hawkins was sent for, and we were of opinion the operation should be performed, although but little could be expected from it. It was performed about eight o’clock: a small bit of gut was found in the sac; just as much of the gut as took in its breadth, so that there was a total stoppage. The moment

the stricture was cut through the contents of the gut above rushed down, and burst the part which lay within the sac. The parts were left in this situation, and dressed. He died at five in the evening.

“Observations and Queries on this Disease and Operation.

“To what was the deception owing? for there was certainly a decrease and change in the feel of the parts: was it owing to the protruded gut being (at) first full, and, by squeezing, its contents had passed the stricture, and got into the gut within the belly; and, therefore, the gut when alone appeared like a thickening of the chord? How was it that we thought we could feel the ring, and that we could introduce a finger into it? Was it that the gut was softer there, and the ring felt hard all round, although there really was no passage? or was it that the inflammation below and close to the rings gave the feel of the ring; and the other part of the sac being natural, allowed of its being pushed into it, and caused the deception?”—*Hunterian MS.: Cases and Dissections*, No. 68.

2612. A large inguinal hernial sac, with shreds of false membrane attached to the upper part of its inner surface. At its lower part the sac divides (as by branching) into two pouches of equal size, of which one lies behind the other. *Hunterian*.

2613. An inguinal hernial sac, with the testicle, dried after the injection of their blood-vessels. The cavity of the sac is partially divided by a transverse crescent-shaped fold or partition from its posterior wall, which may have been formed and protruded like the more nearly complete partition in the preceding case.

From the Museum of Sir A. P. Cooper.

2614. The parts concerned in a femoral hernia. The preparation shows the small, recently protruded hernial sac in the usual situation of a femoral hernia, with the larger closed old sac below and enclosing it, and two or three smaller closed sacs near its sides. The mouth of the recently protruded sac is shown at the back of the preparation; and, about an inch from it on its outer side, directly over the femoral vessels, there is an appearance of another small peritoneal protrusion; its orifice is on the inner side of the epigastric artery, and occupies the position of the internal abdominal ring.

The hernia was operated on by Mr. Hunter, who left the following record of the case :—

“ Femoral Rupture in a Woman.

“ June 1782.—A woman came into St. George’s Hospital with a strangulated femoral rupture. She had had formerly the same disease in the same part ; but it had been reduced, and she afterwards had no further trouble with it till now.

“ After every attempt to reduce the present rupture, and failing, the operation was thought to be absolutely necessary.

“ When the tumour was laid bare, and Poupart’s ligament exposed, I divided the ligament from without, that I might return the contents of the sac without cutting into it: but I found still that the contents would not move. I then made a wound into the lower part of the sac, which appeared there to contain some fluid ; and when this was exposed, it proved to be a circumscribed cavity ; and that the present hernia was the upper part of the tumour.

“ I did not open into the recent sac, which contained the protruded part, but attempted to take off the remaining stricture, for it only consisted of the cellular membrane, &c., that line the parts behind Poupart’s ligament. When this was divided the contained parts easily slipped up into the abdomen. The wound was dressed with a pretty thick compress of lint, to press the two sides of the sac together, that they might adhere.

“ She became extremely low ; a kind of cold sweat came on : she took some cordials, a gentle opiate to prevent the necessity of acting, and a clyster of warm-water to soften, warm, and soothe the bowels : but, about six hours after, she died.

“ On opening the body I observed the following appearances :—The piece of gut which had been down into the sac was the ileum, near to the cæcum. The quantity was just so much as took up the diameter of the gut. It was of a darker colour, and appeared to be more pinched at the part inclosed by Poupart’s ligament than where it had got below into the sac: this part adhered to the mouth of the sac by a slight adhesion, viz., that formed in the six hours ; therefore not mortified.

“ The intestines above the strictured part were distended below, they were of the natural size.

“ There was not sufficient visible cause for the woman’s death.

“ The case had been the following :—She had had formerly a rupture in the same part, which had been reduced, but not the sac, and the mouth of the sac had united, while the sac itself had continued separate : but a new effort, or strain, taking place, a new rupture was produced at the same part, and the old sac was pushed down further into the thigh.”—*Hunterian MS. : Cases in Surgery*, p. 473 ; and *Cases and Dissections*, No. 56.

2615. The portion of intestine which was returned in the operation described above.

Hunterian.

2616. Part of a right inguinal region, together with the sacs of two oblique inguinal herniæ on the same side, dried after the injection of the epigastric, spermatic and other vessels. The anterior sac has a small mouth, is elongated and measures four inches in length. The posterior sac is larger and nearly globular; its mouth is wider, measuring an inch and a quarter transversely, and is placed directly behind that of the anterior sac. The spermatic vessels and vas deferens are attached to the back of the posterior sac, and the lower part of the anterior sac; and the epigastric vessels make a wide circuit, passing round and to the inner side of the necks of both sacs. The spermatic veins are varicose.

From the Museum of Sir A. P. Cooper.

The history of the case is published by Mr. Bransby Cooper, in the 'Guy's Hospital Reports,' vol. iv. p. 327 (London, 1839). The patient was sixty-eight years old. He had suffered pain in the abdomen and vomiting for three days, and constipation for two days, though frequent purgatives had been administered, when Mr. Cooper first saw him. He found the left inguinal region larger than the right, but this appeared to be due to the absorption of the fat on the right side, on which a truss had been worn for many years. A small hernia had been returned on the left side, and one could be made to descend on the right side by coughing, but could be at once very easily returned. But the symptoms of strangulation becoming urgent, the left inguinal canal was laid open. An empty sac was found therein, but no strangulated intestine. The patient died next day; and on the examination after death it was found that the small anterior and elongated sac shown in the preparation had been pushed into the abdominal cavity, together with a portion of intestine, strangulated by its neck. The reduction of this sac had probably been effected by the patient while reducing the intestine from the larger and round posterior sac.

Of the Contents of the Sac.

2617. Portions of omentum, from a case of strangulated oblique inguinal hernia. The lower and larger portion, which is much thickened and indurated, was removed in an operation; the upper, with the ligatures applied on its chief blood-vessels, was removed after death.

The patient was seventy years old and had the hernia fifty

years. Strangulation had existed twenty-nine hours when the operation was performed. The omentum removed was adherent. Death took place on the seventh day after the operation, from sloughing of the wound, and diffuse inflammation of the cellular tissue extending over the ilium to the loins.

The patient had double hydrocele, preserved, together with the hernial sac, in the series of Diseases of the Testicles.

From the Museum of R. B. Walker, Esq.

2618. A small hernial sac, with omentum adhering to its neck and inner surface. The contrast between the healthy omentum above the sac and that which is thickened and indurated within it is well shown. *Hunterian.*

2619. The sac of an inguinal hernia, with a portion of omentum adhering firmly to its neck by several strong thick bands of false membrane. The omentum at the adherent part, but not elsewhere, is thickened and indurated. *Hunterian.*

2620. A large inguinal hernial sac containing indurated omentum, which in several places is adherent to its walls by strong and well-formed bands of false membrane. *Hunterian.*

Effects of Strangulation.

2621. A piece of omentum, completely gangrenous from strangulation.

From a female infant, aged three months, with right inguinal hernia. The sac was opened, the neck or pedicle of its contents ligatured with carbolized catgut, and the mass which is preserved was removed. On the twelfth day all the parts were healed.

Presented by Richard Rendle, Esq., 1872.

2622. Portion of small intestine and mesentery, a part of which was strangulated in a hernia and retains the constricted

appearance derived from the pressure of the neck of the sac. Many shreds of lymph are upon its surface.

Hunterian.

The preparation is engraved in Baillie's 'Morbid Anatomy,' fasc. iv. pl. vii. fig. 3.

2623. A specimen similar to the preceding.

Hunterian.

2624. Portion of small intestine, part of which was returned from a strangulated congenital hernia thirty-seven hours before death. The strangulation had existed seventy-two hours. The constriction is still evident, and the canal of the intestine would only admit a finger, although the patient had many liquid evacuations after the operation. The mesentery is much thickened, and lymph is thinly deposited upon the surface of the intestine.

From the Museum of John Howship, Esq.

2625. Part of a jejunum; a portion of which was strangulated in an umbilical hernia, and was reduced, probably not long before death. The extent of the strangulated portion was distinctly shown by the blotches of congestion and ecchymosis in and beneath its peritoneal coat; these marks were definitely circumscribed by a broad red line, just within which the chief effect of the stricture appears to have fallen. All the coats of the intestine and the adjacent part of the mesentery are thickened; and the peritoneal coat is covered with fine shreds of lymph.

From the Museum of John Howship, Esq.

2626. A portion of ileum, showing a constriction marking off a small segment of the intestine, which is narrower below than above the constriction. The mesentery is quite normal, and the serous coat of the intestine perfectly smooth.

From a woman, aged 69, on whom an operation for femoral hernia was performed forty-eight hours after the commencement of symptoms of strangulation. Before these symptoms the patient had never noticed any hernia. At the operation, Gimbernat's

ligament and the fibres of the "deep crural arch," and the falci-form process of Burns, were divided, and the intestine was easily reduced without opening the sac. After the reduction the patient passed flatus freely, but occasionally vomited, and fifty-four hours after the operation became suddenly faint and died. The constricted portion of the ileum, here shown, lay free in the abdominal cavity; it was not highly congested. The sac was found to have been itself reduced, lying behind the femoral ring. It is preserved (No. 2644), and contained omentum.

Presented by Dr. G. Granville Bantock, 1879.

2627. A portion of small intestine of which the mucous membrane is of a dark brown tint from congestion; its mucous membrane is thickened and finely granular or velvety, as if from effusion of lymph. It had been strangulated in an inguinal hernia for eighteen hours.

From a man, aged 27, who had hernia for six or seven years. The truss which he wore broke; soon after the hernia came down and he began to vomit. Herniotomy was performed, but without relieving his symptoms.

Presented by Dr. Goodhart, 1876.

2628. Portion of small intestine, about eighteen inches long, which was strangulated for twenty-four hours. It is dark coloured and distended; there are numerous shreds of lymph upon its peritoneal surface, but no distinct marks of constriction.

Hunterian.

2629. The parts concerned in an inguinal hernia on the left side of a woman. The sac is oval, elongated from above downwards; the several layers of its walls are confused. It contains a portion of jejunum adherent over nearly all its surface, and so closely strangulated that its vessels have received none of the fluid, which was minutely injected into those of the intestine remaining within the abdomen.

From the Museum of John Howship, Esq.

2630. Portion of the intestine of a child, from a strangulated umbilical hernia. It is said to have been wounded in an

operation to reduce it ; but the form of the aperture in its coats—which is small, oval, with evenly circumscribed and abrupt thin edges, without protrusion of the mucous membrane—makes it more probable that it was perforated by ulceration or sloughing. Its peritoneal surface is thinly covered with lymph.

From the Museum of Sir A. P. Cooper.

2631. Portion of small intestine, in the coats of which is a large opening, with thick irregular margins, near the attachment of the mesentery. It is a rough ulcerated or torn aperture, such as might be produced in a hernia or an internal strangulation. Lymph is deposited on the peritoneal coat for some distance around the aperture, as if the intestine had been adherent to an opposite surface of peritoneum.

Hunterian.

2632. Portion of small intestine, part of which was strangulated in a hernia. Sloughing appears to have taken place on one of its surfaces, where its coats are very thin and perforated.

Hunterian.

2633. Portion of ileum, which was tightly constricted (probably in a hernia) and burst through a large oval aperture, nearly an inch above the seat of constriction. The intestine above the constriction is large and flaccid ; it was probably burst by over-distension.

Hunterian.

Unusual Contents of the Sac.

2634. A large oblique inguinal hernia of the right side. The sac contains the lower end of the ileum, the cæcum, with its appendix, a portion of the ascending colon, and a large piece of omentum. All the coverings of the hernia appear thickened, indurated, and consolidated.

From the Museum of John Howship, Esq.

2635. An inguinal hernia, containing a cæcum and its appendix, with the end of the ileum. The termination of the appendix is fixed to the lower part of the sac ; the rest of it is free. Of that part of the cæcum which has not passed into the hernia one half only is covered with peritoneum.

Presented by Sir William Blizard.

2636. Part of a cæcum, with a portion of the abdominal walls, showing hernia of the vermiform appendix, which, passing through the internal ring (held open by a green glass rod), lies in the inguinal canal. This has been laid open so that the appendix may be seen attached to its walls by a fibrous band at the extremity. A bristle is passed through the vas deferens, and a glass rod into the vaginal process of the peritoneum behind.

From a clergyman aged 56, who had long worn a truss for incipient right inguinal hernia. Increased swelling and pain were at length noticed in the right groin, followed by an abscess and fæcal fistula, through which a small piece of bone came away. He then completely recovered, but died two months later from other causes. (See MS. Notes, vol. i. p. 294, and Trans. Path. Soc. vol. i. p. 269, 1848.)

Presented by Dr. Thurnam, 1871.

2637. A diverticulum of the ileum protruding into and adherent to the anterior surface of the sac of a direct inguinal hernia. The diverticulum is funnel-shaped, and connected with the bowel exactly opposite the attachment of the mesentery. It measures $1\frac{1}{2}$ inches in length and is pervious throughout ; its coats are similar to those composing the intestine. Its distal end is adherent to the outer end of the hernial sac, which is an inch long, and passes obliquely downwards and forwards in the substance of the abdominal wall. Its orifice is situated immediately to the inner side of the obliterated hypogastric artery. A sinus opening at one end through the skin passes obliquely inwards, and communicates at the other end with the ileum near the apex of the diverticulum. The diverticulum may, judging from the history, have been formed by an adhesion, drawing out a portion of intestinal wall into a tubular form.

From a woman aged 77, admitted into hospital one month after

she had been taken ill with vomiting and obstinate constipation. On admission she was much exhausted, her tongue was brown and dry, the bowels acted naturally, though still much constipated, and diffuse cellulitis of the right groin was present. In a few days, a large bleb, over the middle of Poupart's ligament, in the midst of the inflamed area, burst and discharged watery fluid and faecal matter. Three months later the patient died of severe diarrhoea. The case is recorded in the Trans. Path. Soc. vol. xxvi. p. 109.

Presented by Dr. T. Stretch Dowse, 1875.

2638. A right inguinal hernia. The sac is much thickened, and contains the cæcum, affected with colloid cancer, together with a portion of the ileum and a portion of omentum adherent in front and at the sides. The testicle and tunica vaginalis lie below the hernia-sac, which can be separated from them.

From a man aged 64, admitted into hospital in a moribund condition, from obstruction of the bowels, simulating strangulation. He had long been the subject of irreducible hernia, and had never worn a truss. For full history and drawings, see MS. Notes, vol. ii. p. 148.

Presented by John Gay, Esq., 1874.

2639. A very large inguinal hernia, from a Monkey. The sac contains a portion of colon with omentum, both in a healthy state. The testicle is directly below the sac. *Hunterian.*

2640. Part of a hernial sac, from a Horse, containing a large portion of colon, which is adherent to what remains of the sac and has false membrane upon its surface. *Hunterian.*

2641. A hernial sac, from a Bitch, containing small intestine, a large portion of omentum, and part of the uterus.

Hunterian.

Occasional Results of Taxis.

2642. Portion of small intestine, which was strangulated in a hernia, and was burst, probably in an unsuccessful attempt to reduce it. A rent extends round half the circumference

of the intestine ; its edges are not ulcerated, nor do they appear much altered in texture. The marks of constriction are evident.

Presented by Sir William Blizard.

- 2643.** Part of the anterior wall of an abdomen, with a left inguinal hernia. It appears that, in an attempt to reduce the hernia, the sac was pushed back, with the intestine in it tightly strangulated by its neck. The sac, which is pyriform, and nearly three inches in its chief diameter, is now placed on the outer side of the internal ring, between the abdominal and iliac muscles and the peritoneum, part of it lying below the crural arch, and extending outwards nearly as far as the external iliac vessels. The sac thus forms a large tumour projecting inwards towards the abdominal cavity, but is not discernible anteriorly: it is laid open from behind, and contains dark-coloured small intestine. The external inguinal ring is large, and so also is the spermatic cord.

The patient, a stout man, 53 years old, had a hernia many years, but, always wearing a truss, had suffered little inconvenience from it, and never had difficulty in returning it, till one day, when, without evident cause, it became tense and painful. It appeared to be completely reduced by his surgeon, but the signs of strangulation increased, and on the fifteenth day from their commencement he died.

From the Museum of John Taunton, Esq.

- 2644.** Part of an inguinal region, with the sac of a femoral hernia, which had been forced between the peritoneum and abdominal muscles, after the intestine which it contained had been returned into the abdominal cavity. It is of an oblong form and is not much thickened; it has been opened, to show that it contains much omentum loaded with fat, but little hardened or altered. Close to the neck of the sac, and internal to it, is the obliterated right hypogastric artery, which is shown joining the urachus above. The pouch between these two cords is well developed. Posteriorly the omentum may be seen, entering the neck of the sac.

Removed from the same patient as 2626. The sac lay immediately behind the femoral ring, into which it bulged ; the crural

canal was very wide, owing to the free division of constricting ligaments found necessary during the operation.

Presented by Dr. G. Granville Bantock, 1879.

2645. Portion of small intestine, with the inguinal hernia in which it was strangulated. The part strangulated includes the whole circumference of the intestine: it was so completely filled with the portions of the skin of an apple or potatoe, which now lie below it, that it was impossible to return it. In the efforts at reduction, part of the neck of the sac and of the peritoneum round it were separated from their connection and pushed into the abdomen.

Presented by Sir William Blizard.

ANATOMY OF THE PARTICULAR FORMS OF HERNIA.

Inguinal Hernia.

2646. The right inguinal region of a man, dissected and dried after the injection of its vessels, to display the parts concerned in inguinal hernia. The aponeurosis of the external oblique muscle has been divided near its lower margin, and nearly parallel to it; and its two portions are widely separated, the external inguinal ring being preserved entire. The lower margin of the internal oblique is shown, and, with that of the transverse muscle, is raised up, after being separated from its attachments to the crural arch. The fascia transversalis and the internal inguinal ring are thus shown. The vessels of the spermatic cord, also, are shown resting on the lower and inner margin of the internal ring, and passing through the inguinal canal and external ring to the testicle. The epigastric vessels are seen behind the fascia transversalis ascending obliquely near the inner margin of the internal ring; and below the crural arch are the trunks of the femoral artery and vein, the anterior crural nerve, and two sets of lymphatic vessels injected with mercury. At the back of the preparation the epigastric vessels are shown more clearly; here also are shown the

cremasteric and pubic branches of the epigastric artery, and the vas deferens separating from the spermatic artery and veins.
From the Museum of Sir A. P. Cooper.

2647. The corresponding parts from a female, similarly prepared. The muscles, fasciæ, and rings are shown in nearly the same relations as in the last specimen, but the peritoneum is here preserved ; and connected with it, but not communicating with its cavity, is a long slender pouch, or sacculus, which lies in the inguinal canal, and is connected with the round ligament. The femoral blood-vessels and lymphatics are shown, as in the last specimen. The circumflex iliac vessels are also shown. *From the Museum of Sir A. P. Cooper.*

2648. The parts concerned in inguinal hernia, from the left side of a robust man. The skin, superficial fascia, and aponeurosis of the external oblique muscle are turned downwards ; the sheath of the rectus muscle is laid open ; and a portion of the lower border of the internal oblique has been cut from its insertion, and is turned downwards by the outer side of the spermatic cord. The inner half of the lower border and the insertion of the transverse muscle are shown, and a bristle is placed under two small fasciculi of muscular fibres, which pass in the same direction as those of the lower border of the transversalis, but lie behind the spermatic cord. Fasciculi of the cremaster are shown, in connection with that portion of the lower border of the internal oblique which is turned downwards and outwards ; others are reflected inwards in a layer of cellular tissue from the front and inner surface of the spermatic cord.

Presented by G. J. Guthrie, Esq.,

by whom the preparation is described and engraved in a treatise "On some points connected with the Anatomy and Surgery of Inguinal and Femoral Hernia," London, 1833, pl. i.

2648 A. Part of a pelvis, with the right inguinal region, dried, and exhibiting the relations of a small oblique inguinal hernia containing intestine. *Hunterian.*

2649. Part of a male pelvis, with the urinary and genital organs, giving a lateral view of the parts concerned in a large oblique inguinal hernia on the left side. The coverings of the hernia are dissected in five layers; exhibiting, from without inwards, the skin, subcutaneous fat and superficial fascia, the intercolumnar fascia, the cremaster muscle, with the fibro-cellular tissue connecting its fasciculi, and the fascia transversalis. The sac is not opened. There is a stricture nearly an inch in length in the membranous portion of the urethra; the prostate gland and the prostatic portion of the urethra are enlarged; the bladder is contracted, and its muscular coat is very thick.

From the Museum of Robert Liston, Esq.

2650. Part of a right inguinal region, with a large oblique inguinal hernia. The coverings of the anterior and lower part of the hernia have been dissected, and portions of them are separately raised from the surface of the sac. The vas deferens and spermatic vessels, lying on the inner and posterior part of the hernia, are widely separated from each other. The epigastric artery and vein, winding under the neck of the sac, have been displaced and elongated, as the neck of the sac has gradually moved from without inwards, and as the direction of the inguinal canal has become straight; they reach the side of the lower part of the rectus muscle before they turn upwards.

From the Museum of John Howship, Esq.

2651. Part of a right inguinal region, with the penis, scrotum, &c., and a very large oblique inguinal hernial sac, from a mulatto. The hernia hangs almost vertically, and, though empty, measures seven inches from above downwards. Three distinct layers have been dissected in its coverings between the sac and the skin. The testicle is directly below the hernia and appears compressed by it.

From the Museum of Robert Liston, Esq.

2652. Some of the blood-vessels concerned in inguinal hernia, injected and dried, with the adjacent parts. The epigastric artery is shown ascending near the inner margin of the internal ring, and giving off the cremasteric artery, which descends with the spermatic vessels and the vas deferens. Above the cremasteric artery, also, two small arteries are given off from the epigastric, and run inwards nearly parallel with the lower border of the tendon of the internal oblique and transverse muscles.

From the Museum of Sir A. P. Cooper.

2653. A similar preparation, from a woman, showing some of the relations of an inguinal and a femoral hernia on the right side. Both the herniæ are small. The inguinal hernia has only reached the external ring; it is exposed by the division of the aponeurosis of the external oblique near its lower border, and by the raising of the lower margins of the internal oblique and transverse muscles. The vessels are shown in the same relation as in the preceding specimen. The sac of the femoral hernia is exposed by the removal of all its coverings; the epigastric vessels are seen passing above and to the outer side of its mouth, as they wind below and on the inner side of the mouth of the sac of the inguinal hernia.

From the Museum of Sir A. P. Cooper.

2654. The parts concerned in a small oblique inguinal hernia on the left side. The sac has just passed through the external inguinal ring, where it forms a small globular tumour, with broad fasciculi of the cremaster muscle on both its inner and its outer surface. The enlargement of the external ring, the swelling in the oblique course of the inguinal canal, and the obliquely placed mouth of the sac, with the vas deferens at its lower margin, are well shown. Part of the epigastric artery, turning round the under and inner part of the mouth of the sac, is dissected out; the obturator artery is derived with it by a short common trunk from the external iliac.

From the Museum of John Howship, Esq.

2655. The parts concerned in a small oblique inguinal hernia, dried after the injection of their blood-vessels: from the left side of a woman. The aponeurosis of the external oblique has been divided nearly parallel to the crural arch, and its two portions are widely separated, the external ring being preserved. The lower margins of the internal oblique and transverse muscles are turned upwards. The fascia transversalis is also in part turned upwards, so as to show the inner border of the internal ring, and the neck of the sac passing through it. Part of the covering which the sac received from the intercolumnar fascia is left beneath that part of it which projects beyond the external ring.

From the Museum of Sir A. P. Cooper.

2656. The anterior part of a pelvis, with part of the abdominal walls and the sacs of two large inguinal herniæ. Both the sacs have the same form and size, the mouths of both are very wide, and at the back of each the vas deferens and the spermatic vessels run far apart from each other. The margins of the external rings, and the tendinous bands above them, are strongly developed.

From an old man who had calculi in the urinary bladder. The herniæ protruded during straining and were easily reducible. He was cut for the stone and his bladder is preserved.

From the Museum of Robert Liston, Esq.

2657. The lower part of the anterior wall of an abdomen with the spermatic cords, testicles, &c. On the right side is the sac of an oblique inguinal hernia; on the left, a hydrocele of the tunica vaginalis, of nearly the same size as the hernial sac.

The preparation affords a good view of the difference of the external appearances produced by the two diseases. The parts were taken from a man 86 years old. The hydrocele had been tapped three times.

From the Museum of John Howship, Esq.

2658. The sac of an inguinal hernia, dried. It measures ten inches from above downwards and six inches in its transverse diameter.

Presented by Sir William Blizard.

2659. An inguinal, but not congenital, hernial sac, from an infant ; with the testicle and its vessels injected and dried. The vessels are widely separated upon the sac.

From the Museum of Sir A. P. Cooper.

2660. The parts concerned in an incomplete oblique inguinal hernia, on the left side of a man. Part of the aponeurosis of the external oblique muscle has been cut away from the crural arch and turned upwards ; and the lower margins of the internal oblique and transverse muscles are raised to expose the hernial sac, which has descended through half the inguinal canal. The external inguinal ring is left entire. The femoral vessels, also, are shown in front, with the obturator artery given-off by a short common trunk with the epigastric. At the back of the preparation, the epigastric artery is dissected out as it passes under and on the inner side of the neck of the sac and the internal ring.

From the Museum of John Howship, Esq.

2661. An injected and dried preparation of part of the left inguinal region of a woman, with an oblique inguinal hernia in the canal ; the canal is not laid open ; the hernial sac fills and enlarges the canal, and extends to the external ring ; a part of the round ligament projects from it. The epigastric artery and veins are shown passing obliquely upwards on the inner side of the internal ring and the circumflex iliac vessel passing outward near its outer border. Two sets of lymphatic vessels are injected on the inner side of the femoral artery and vein ; and a lymphatic gland is attached to the aponeurosis of the external oblique muscle near the external ring.

From the Museum of Sir A. P. Cooper.

2662. Part of a right inguinal region, dried after the injection of its blood-vessels, and exhibiting a small direct inguinal hernia, from which two layers of the coverings of the sac

have been dissected. The epigastric vessels lie close to the outer margin of the mouth of the sac; and the vessels of the spermatic cord are close to the outer part of its coverings.

From the Museum of Sir A. P. Cooper.

2663. An inguinal hernia, with a hydrocele of the tunica vaginalis. The hernial sac, which is placed directly above that of the hydrocele, and projects a little into its upper wall, is opened from behind; it is filled with healthy omentum, which is adherent to its inner surface. The hydrocele is of small size, and the testicle is situated in the middle of the posterior wall of the sac. *Hunterian.*

2664. The parts concerned in an oblique inguinal hernia, with a large hydrocele of the tunica vaginalis, on the right side. The hernial sac is nearly three inches in length, and its mouth is very wide; it has descended so as to come in contact with the upper part of the distended tunica vaginalis. The testicle, flattened and small, is in the lower third of the posterior wall of the distended tunica vaginalis: at the back, the vas deferens and some of the vessels of the spermatic cord are shown separated to nearly an inch from each other; large bundles of the cremaster muscle descend over both the hernial sac and the hydrocele. The epigastric artery and vein are shown winding under the neck of the hernial sac.

From the Museum of John Howship, Esq.

2665. The sac of a scrotal hernia, combined with hydrocele of the tunica vaginalis. The cavity of the tunica vaginalis has been laid open, and its anterior part turned back: in front, the tunica vaginalis is thickened; behind, it is very thin; a few shreds of false membrane are shown, by which its surfaces were united; the testicle, reduced in size, is situated at the lower and posterior part. The hernial sac has descended to the level of the testicle, pushing down the tunica vaginalis before it, so that the sac of the tunica vaginalis nearly surrounds the sac of the hernia.

Hunterian

2666. A long inguinal hernia, with varicose spermatic veins widely separated from the vas deferens on its posterior surface.

From the Museum of Sir A. P. Cooper.

2667. The lower part of the front wall of an abdomen with an oblique inguinal hernia on each side, a hydrocele of the right tunica vaginalis, and varicocele of the left spermatic veins : dried after the injection of the blood-vessels. The inguinal canals have been laid open, and the lower borders of the internal oblique and transverse muscles are raised. By the pressure of the herniæ the rings on both sides are brought near each other, so that the sacs appear to have been protruded directly from the abdomen. The vessels of the cord are separated.

From the Museum of Sir A. P. Cooper.

Congenital Hernia.

2668. The sac of a congenital hernia, in which the testicle was situated at the external ring. A small elongated growth of fatty tissue is attached to the upper part of the epididymis.

Presented by Sir William Blizard.

2669. The sac of a large congenital hernia. The exterior of the sac is uneven and sacculated, through the unequal yielding of parts of its walls : the testicle is situated at the lowest part.

Hunterian.

2670. The sac of a large congenital hernia, nearly full of healthy omentum, which is in several places adherent to its walls.

Hunterian.

2671. An inguinal hernia, from some large animal, with small intestine and omentum protruded into the cavity of the tunica vaginalis.

Hunterian.

2672. Part of the pelvis and abdominal walls of a young child, with the sac of an inguinal hernia, nearly two inches long, on the right side. The sac is formed by the elongated and dilated funicular portion of the vaginal process of the peritoneum ; the testicle is directly below it, and the cavity of the tunica vaginalis is closed above and has no connection with the hernial sac.

From the Museum of John Howship, Esq.

Femoral Hernia.

2673. The parts concerned in a large femoral hernia in a man. The sac is nearly globular, but somewhat elongated transversely, measuring in that direction four inches and a half in diameter ; its mouth is transversely oval, and upwards of an inch wide. It contained part of the right colon, adherent, but not strangulated. Portions of the fascia superficialis and fascia propria are separated from the anterior surface of the sac ; they are all thin, and appear healthy in texture. On the inner side, the spermatic cord has been pushed inwards by the sac ; externally, the sac overlaps the femoral artery and vein and extends to within half an inch of the anterior crural nerve. The epigastric artery is shown, running tortuously from the upper border of the sac, at the back of the preparation.

From the Museum of John Howship, Esq.

2674. Part of an inguinal region, with a large globular femoral hernia, from a man. The sac contains a portion of small intestine : its neck is very wide, and it has pushed aside the femoral vessels ; its coverings have been removed.

2675. The parts concerned in inguinal and femoral herniæ, from the right side of an old man. There is a large femoral hernia, measuring about three inches in its transverse and nearly two inches in its vertical diameter, and extending on the outer side over the femoral vessels. The sac has been laid open ; it contains a large piece of hardened and

adherent omentum, in the middle of which is a cavity, wherein a portion of strangulated small intestine lay. Part of the aponeurosis of the external oblique muscle has been raised, to show the lower margins of the internal oblique and transverse muscles, and the spermatic cord passing through the lower part of the inguinal canal. At the back of the preparation parts of the epigastric and obturator arteries are shown; they arise by a common trunk, and the obturator passes downwards on the outer side of the femoral ring, between the neck of the sac and the external iliac vein.

From the Museum of John Howship, Esq.

2676. An unreduced strangulated femoral hernia. The sac, of which the walls are much thickened, has been laid open: it contains a loop of small intestine with omentum. At the back of the preparation, the contraction of the intestine before the strangulated part, and the dilatation of that behind it, are well shown.

The following account of the case was left by Mr. Hunter:—

“The case of Mr. Thomson’s Woman, who died of a Rupture.

“Mrs. —, aged 35, had a rupture for several years, but it was occasionally reduced, though often with difficulty. At last she was attacked with it so severely that she could not reduce it herself, and sent for Mr. Thomson, surgeon, who found her with all the symptoms of a strangulated gut.

“He attempted to reduce it; but at first could not. It was fomented, and the smoke of tobacco was thrown up by the rectum. Cold sweats, a small quick pulse, and hiccough came on: at last he reduced it, but the symptoms did not in the least abate, and the straining with the vomiting produced the rupture again, which now became out of his power to reduce. He proposed an operation, but she would not consent to it. She died, and was opened.

“On opening the belly there was found a large quantity of the contents of the intestines lying loose in the cavity of the belly. On examining further, a portion of the ileum, and a small portion of epiploon, were found down in the hernial sac; and upon examination it was found that the same gut which had come down at first was not down now; and the gut which had been down first, and reduced, was (also) the ileum, which I found so much mortified as to have given way in some places, forming several holes in it, through which had flowed the matter which was found in the cavity of the belly.

“Here was a complicated case beyond all relief; for if the

second rupture had not happened she must have died ; and, of course, if the operation had been performed for the second rupture, she would also have died of the consequences of the first.

“ This case shows that when the symptoms of the rupture have gone very far, that it is imprudent to reduce it, even if possible ; but as it is impossible, perhaps, to tell when the mortification of the gut is gone too far for reduction, it, will, in general, be attempted while life exists, with the hopes of a cure.

“ Upon the other hand it may be asserted, or supposed, that if it is not reduced, that the person must also die ; but this is not so certain as the other ; for the mortification of a gut simply does not kill : it only kills from its consequences ; and there is a material difference between a mortified gut out of the belly and one within. The consequence of one within is absolute death ; but the one without in general endeavours at a cure, by producing inflammation and suppuration in the parts, which is producing a fistulous orifice, or artificial anus.

“ It is very curious to observe in hernias, that while the gut is in the sac, and alive, no inflammation takes place on the sac or integuments ; but the moment the gut becomes mortified or dead, the stimulus of an extraneous body takes place immediately : an outlet is then endeavouring to be made by the inflammation and suppuration of the sac, forming an abscess in it ; which matter, with the contents of the gut, is brought to the skin. While this is going on, the sound gut within the abdomen, where it passes into the rings, adheres to those rings all round ; so that when the abscess is formed, burst, or opened, and the mortified parts sloughed off, these ends of the gut open into the abscess, and not into the cavity of the belly.

“ But although Nature is doing all this, yet she is seldom able to succeed ; for the stricture which was the cause of strangulation and mortification remains so tight as hardly to allow a passage for the contents of the intestines. Perhaps it might be proper, even then, to dilate the rings.”—*Hunterian MS. : Cases and Dissections*, No. 53.

2677. The left side of a pelvis, with part of the abdominal walls and a large femoral hernia. The hernia, enlarging equally in all directions after its escape from the femoral canal, overlaps both the femoral vessels and the crural arch, and extends also inwards and downwards. The sac contains omentum, which is adherent to its mouth and neck, and to which a portion of small intestine is adherent within the abdomen. *From the Museum of John Taunton, Esq.*

*Unusual Distribution of Arteries in Inguinal and
Femoral Herniæ.*

2678. The right side of a male pelvis, with the blood-vessels and other parts injected and dried. The epigastric artery is given-off by the external iliac, a quarter of an inch above the crural arch. About two fifths of an inch from its origin it gives-off a branch nearly a line in diameter, which descends, winding round the inner margin of the femoral ring, in the course sometimes taken by the obturator artery, when (as in the specimen next described) it arises by a common trunk with the epigastric. After turning round the femoral ring this branch passes under it, goes towards the foramen ovale, and joins the trunk of the obturator artery, which is of ordinary size and passes, as usual, from the internal iliac. The junction of the two vessels takes place about half an inch previous to their united trunk leaving the pelvis.

From the Museum of Robert Liston, Esq.

2679. Part of an inguinal region, with its large blood-vessels injected. A long hernial sac extends for an inch and a half below the crural arch, close to the inner side of the femoral vein. The obturator artery, arising by a common trunk with the epigastric artery, passes over and round the inner side of the neck of the sac: the length of the common trunk is about eight lines.

From the Museum of Robert Liston, Esq.

Umbilical Hernia.

2680. Part of the anterior wall of a child's abdomen, with a small umbilical hernia.

Hunterian.

2681. Part of the anterior wall of an abdomen, with the sac of a small umbilical hernia. The mouth of the sac is very small; it is completely lined with peritoneum, a portion of which, at the anterior part, has been separated from its coverings.

Presented by Sir William Blizard.

2682. The peritoneal sac, with the surrounding parts of the umbilical hernia, in which the intestine, No. 2630, was strangulated. The umbilical cord is at the lower part of the sac; the umbilical vein at the mouth of the sac is open.

From the Museum of Sir A. P. Cooper.

2683. The sac and coverings of an umbilical hernia, with a portion of small intestine strangulated in it. The strangulated intestine is wrinkled and dull white, as if it had sloughed. The sac is thickened.

From the Museum of Sir A. P. Cooper.

2684. Portion of the abdominal walls, with the sac of the umbilical hernia, from which the intestine, No. 2625, was returned after the division of the stricture on the left side of the mouth of the sac. The effects of the division can be seen in a slight effusion of blood in the situation mentioned. The sac became much smaller after the operation; its internal surface is rough, as if from lymph deposited within it.

From the Museum of John Howship, Esq.

2685. The parts concerned in a large old umbilical hernia. The tumour formed by the protrusion had an irregular knobbed surface externally, and on its interior such prominent ridges exist on some parts of the sac that it appears as if it were more than one cavity. The tissue of the sac is thin and transparent; it is filled with small intestine and omentum. The skin is flaccid and wrinkled.

Towards the close of life the hernia had become much smaller as the patient became more emaciated.

From the Museum of John Howship, Esq.

2686. A longitudinal section of the abdominal walls in the region of the umbilicus, showing an umbilical hernia, which contains omentum and is partly "intraparietal," an offset of the sac protruding upwards between the layers of the abdominal walls.

From a Dissection-subject, 1871.

2687. A portion of the anterior wall of an abdomen, with part of the sac of an umbilical hernia and its contents, from a woman who died twenty-four hours after the operation for hernia was performed, and the contents of the sac were returned. The sac was very large; the part which remains has thick walls strongly fasciculated on their internal surface. The returned omentum is closely adherent to every part of the mouth of the sac, and the returned intestine is adherent at the back of the omentum.

Mr. Hunter used to say of it:—"This is a preparation where Nature had done every thing in her power; it is of the umbilicus of one on whom I performed the operation, and who died in a little time after: and here you may see that the epiploon has, after the operation, adhered all round to the inner edge of the wound."—'*Hunterian Reminiscences*,' by Mr. James Parkinson. London, 4to, 1833, p. 88.

2688. A large umbilical hernia, containing small intestine and, at the upper part, some hardened omentum. The greater part of the sac and its coverings has been removed. An incision an inch and a half long was made into the front of the intestine during life; for it was found, in the operation performed for the relief of hernia, that the intestine had sloughed beneath and near the stricture. A quill is passed into the sac and through its neck into the aperture produced by the sloughing in the intestine. Except at this aperture the intestine is everywhere adherent to the mouth of the sac, and shreds of lymph and false membrane are attached to its outer surface.

The patient, a woman 37 years old, had the hernia many years. The operation was performed on the eleventh day after strangulation commenced. The cuticle had begun to separate, the skin was purple, and a part of the sac over the aperture in the intestine had sloughed. The intestine was freely opened, the omentum was cut off, and the stricture was not divided. The patient died six hours afterwards.

After death it was found that fæces had escaped into the abdomen, through the aperture produced by the sloughing of the intestine. This aperture, as the preparation shows, extended into that part of the intestine which was within the abdomen, as well as into that in the sac immediately beyond the stricture.

The case is recorded in the '*Edinburgh Medical and Surgical Journal*,' vol. xxi. p. 293, April 1824.

Presented by Joseph Swan, Esq.

Obturator Hernia.

2689. Part of a pelvis, with a strangulated hernia of a small portion of ileum through the obturator foramen on the left side. The sac is opened anteriorly ; it protrudes straight through the foramen at its upper and inner part.

From the Museum of John Howship, Esq.

INTERNAL STRANGULATION OF PARTS OF THE DIGESTIVE
CANAL.

2690. Portion of ileum and colon, showing a knuckle of the ileum strangulated by a band which arises from the lower part of the caput cæci, and is attached near the root of the appendix vermiformis. The band has formed a loop from half to two thirds of an inch in diameter, through which the lower two inches of the ileum have passed and become tightly strangulated. It is closely connected at one origin with the meso-cæcum, where that fold is reflected from the bowel, and in its immediate neighbourhood are enlarged and calcareous mesenteric glands. These, the position of the band, and its cord-like form make it probable that the band originated in some bygone inflammation, and that it gradually stretched to its present condition.

From a boy aged 9. On the day after amusing himself by jumping violently up and down the steps of a staircase for several hours, he was seized with vomiting and pain in the abdomen. These symptoms continued, with constipation, till his death four days after the violent exercise.

Presented by Joseph Walker, Esq., 1864.

2691. Parts of an ileum and cæcum. The ileum, between two and three inches from its termination, is constricted by a thin band or cord of false membrane, which is attached at one end to a part of the omentum adherent to the mesentery, and at the other to the opposite surface of the mesentery, just above and behind the small intestine. In its course

the band tightly encloses a portion of small intestine, nearly half the circumference of which is torn through at the constricted part.

The history of this case is recorded by Mr. Hunter as follows:—

“Mrs. Long, in Potter Street, Westminster, was opened in presence of Drs. Huck and Garthshore. She had been ill for some days with a violent pain in the right and lower part of her belly, attended with vomiting. It came on without any cause that could be assigned. Nothing passed through her; she had gentle laxatives given her; also clysters thrown up, which came away as they were given. The warm bath was had recourse to, without any effect, and on the third or fourth day after the first attack she died. On opening the body the appearances were as follows:—The jejunum and ileum were pretty much distended with air, and also contained a dirty coloured fluid, which seemed to be what she had taken when alive. The epiploon adhered to the mesentery by a small adhesion near to the termination of the ileum. On examining this part we found that a doubling of the ileum, about an inch from its termination into the colon, had pushed through a kind of loop-hole made by the epiploon at this adhesion, and was there strangulated, as is often the case in a hernia.”—*Hunterian MS.: Dissections of Morbid Bodies*, No. 129, p. 216.

A further account of the case, and engravings of the specimen, are given by Dr. Garthshore in the ‘Medical Observations and Inquiries, by a Society of Physicians in London,’ vol. iv. p. 223 (London, 1771). The patient was a girl 21 years old, and died six days after the commencement of her illness. It is said:—“As this cord was attached by one end to the mesentery, at a part to which the omentum adhered, and by the other to the ileum, Mr. Hunter [who was present at the examination of the body] imagined that it might have been originally formed by an adhesion of the omentum to both the mesentery and the ileum. He has since shown me two ligamentous processes somewhat similar, only more uniform in appearance. The one was attached by its extremity to two different parts of the same intestine; the other, to the intestine and to the mesentery. As there were in both cases evident marks of preceding inflammation, it is probable that they were formed first by an inflammatory adhesion of the parts, and then by a subsequent distraction and stretching, occasioned by the peristaltic motion of the intestines, and by exercise.”

2692. A part of the abdominal integuments, including the umbilicus, close behind which a coil of small intestine is adherent by a shred of recent lymph (which is strengthened

in this specimen by a silk thread). The intestine is sharply bent at the point of adhesion, and beyond this is empty.

From a lady aged 45. Both ovaries were removed for cystic disease; the right was partly adherent to the abdominal wall, the transverse colon, and the omentum. After the operation no flatus or fæces ever passed. On the fourth day vomiting commenced, the abdomen became distended, and the patient appeared prostrate. On the seventh day she died. On *post-mortem* examination the ileum, fifteen inches above the ileo-cæcal valve, was found adherent and bent on itself at an angle of 50° ; it was extremely distended with flatus above this bend (which, as the specimen shows, was caused by an adhesion), and cord-like below it. The distended portion of ileum has shrunk considerably during the process of preparation.

Presented by Sir T. Spencer Wells, 1879.

2693. Portion of colon, to which the great omentum has in several places acquired unnatural adhesions. In one part, marked by a piece of whalebone, one of the appendices epiploicæ is adherent to the omentum in such a manner as to produce some degree of constriction of the canal of the intestine. *From the Museum of John Heaviside, Esq.*

2694. A portion of ileum, strangulated by a band which passed between the head of the cæcum and Poupart's ligament. Below, at the portion of ileum which lay above the constricted loop, is seen a solid-looking tumour projecting under the mucous membrane of the bowel; in the adjacent mesentery is a still larger and softer mass, which has been laid open.

From a man, aged 65. He was admitted into hospital, with symptoms of strangulation of six days' duration, and in so collapsed a condition that he died before he could be put to bed. The omentum was adherent in the neighbourhood of the band of mesentery, and took part in the strangulation of the intestine. It does not appear that the growths had any immediate connection with the strangulation. (See *Trans. Path. Soc.* vol. i. p. 97.)

Presented by Dr. Peacock, 1876.

2695. A cæcum, with part of the ileum on which is a diverticulum. From the free end of the diverticulum there proceeds a smooth round cord, consisting, probably, of the obliterated omphalo-mesenteric vessels, about a line in thickness, and two inches and a half in length, which is attached at its opposite extremity to the mesentery, an inch and a half from the border of the intestine. A loop is thus formed by the diverticulum, the mesentery, and the cord connecting them. Two portions of the ileum, lying between the diverticulum and the cæcum, had become twisted over the cord and slipped through the loop. The diverticulum is two inches long, and an inch wide at its base, and has the structure of healthy intestine. The intestine above the diverticulum is of ordinary size to within an inch of the part from which the diverticulum proceeds; the canal of the intestine then suddenly becomes not more than half an inch in diameter; and it remains of this size to where the diverticulum is given off; its coats also are at this part very thin and flaccid. Immediately beyond the diverticulum the canal of the intestine regains its ordinary size; and thus (since the base of the diverticulum is as large, and its coats are as strong, as those of the intestine itself) the lower part of the intestine appears as a continuation of the diverticulum, and not of the upper part of the intestine, its connection with which might easily be overlooked. *Presented by James Wilson, Esq.*

2696. A portion of small intestine and cæcum, from a patient who died of internal strangulation. There are two small diverticula from the ileum, both of which appear to be formed of all the coats of the intestine—serous, muscular, and mucous. They are situated very near to each other, and about two feet from the ileo-cæcal valve. The lower one arises very obliquely from near the mesenteric attachment of the coil of strangulated intestine, and is directed downwards; in the specimen it is on the observer's right. It is two inches in length, and its first portion is not more than a quarter of an inch in diameter, but its extremity is dilated into a flask-shaped closed tube. The upper

diverticulum arises from the free margin of the intestine, two inches from the other, and is three quarters of an inch long, widest at its commencement, and tapers gradually into a strong, round, fibrous cord, also about three-quarters of an inch long, of which the end is firmly adherent to the intestine, about a foot higher up. The diverticulum and cord form a constricting band, under which the strangulated portion of intestine, consisting of about two feet of the lower end of the ileum, has passed; the strangulated loop is twisted on its own axis. At the post-mortem examination the intestine was intensely congested, much recent lymph was effused upon it, especially round the seat of stricture, and it lay in the upper and posterior part of the left side of the pelvis. Projecting from the cæcum, about two inches from the ileo-cæcal valve, is a small rounded pouch, having an aperture of communication that would only admit a small probe. The vermiform appendix is adherent at its extremity to the side of the small pouch just mentioned.

The diverticulum which caused the constriction corresponds in situation and structure to the "diverticulum verum" of Meckel, resulting from the persistence of the omphalo-mesaraic duct.

John A., 21 years of age, a sawyer by trade, of costive habit, was admitted a patient of the London Dispensary on May 11th, 1833. He had been at work as usual on the 8th, when he suddenly felt a sensation as if his bowels were drawn-up in knots; he soon became sick, and had subsequently no motion. He had been twice bled, with relief, and leeches upon the abdomen; and had taken calomel, jalap, and scammony. On the 16th he was much exhausted and emaciated, his features very much shrunk; the abdomen greatly distended and tympanitic. There was something resembling a pouch to the right of the umbilicus, and below this an induration which was very tender when touched. Pressure upon any part of the abdomen gave pain, but more especially in the before-mentioned part and in the course of the descending colon. He lay with his legs drawn towards the abdomen, being easiest in that position; the tongue was brownish; pulse soft, 108; skin perspiring; rectum, upon examination, found to be normal and healthy; he had had no rigors. With the exception of two days, vomiting had been constant from the commencement of the illness; and latterly a large quantity of very offensive stercoraceous matter was brought up.

May 17th. The vomiting continued urgent; the matter rejected was yellow, and seemed to come from the small intestines. He became delirious, and died at 11 A.M.

Presented by R. R. Robinson, Esq.

- 2696 A. A portion of a sigmoid flexure with its mesentery. In the mesentery is a broad ligamentous band which passes on to the anterior surface of the intestine. Its margins stand out free above the subjacent meso-sigmoidea, and form the anterior boundaries of two pouches, of which the lower is deep and passes upwards behind the peritoneum. This pouch is probably that described as the fossa inter-sigmoidea, and which at times forms the sac of an internal hernia.

Presented by Frederic S. Eve, Esq., 1884.

INTUSSUSCEPTION.

2697. An intussusception of a jejunum. A portion about four inches long has passed downwards into the canal below, which is to the same extent inverted to receive it. A section has been made of the lower and outer portion of intestine.

The patient died with polypus and inversion of the uterus. Her case is related, with the description of the uterus, No. 4597.

Hunterian.

2698. An intussusception of an upper part of the small intestine, probably the jejunum. The strangulated portion is six inches in length. The whole of the coats are gangrenous, and there were loose shreds of lymph on the neighbouring portions of bowel.

From a young lady, aged 19, who was seized with paroxysmal abdominal pain and vomiting; about a fortnight later the pain became constant and severe, and it lasted till her death a week later. At no time during these symptoms was there complete constipation. (See Trans. Path. Soc. vol. xxiv. p. 108.)

Presented by Dr. Peacock, 1876.

2699. Portion of the small intestine of a child, four years old, in which are three intussusceptions close to one another. In all of them the intussuscepted portion is directed down-

wards. There is no appearance of any change of structure being produced by them. *Hunterian.*

2700. Portion of ileum, with intussusception. The intussuscepted part has been carried downwards; its lower orifice is turned towards the attachment of its mesentery and is narrow and elongated.

2701. An intussusception of the ileum. A portion of it is shown by the removal of a part of the ensheathing layer. It is about an inch long, and considerably constricted at its neck. The canal of the bowel was not completely occluded.

From an infant, fifteen weeks old. It vomited during a railway journey, became suddenly collapsed, and died in nine hours. There were no signs of inflammation either in the part itself or in its neighbourhood.

The case is recorded in 'The Lancet,' 1874, vol. ii. p. 242.

Presented by Dr. Cullingworth.

2702. A portion of intestine, showing an ileo-colic intussusception. A part of the ileum, a few inches above the ileo-cæcal valve, has become involuted, has passed through the valve, and entered the ascending colon.

From a boy, 4 years of age. On returning from a long walk, he complained of uneasiness in the bowels; and soon after, vomiting came on, and continued, with occasional intervals of many hours, until his death, which took place twelve days after the commencement of the symptoms.

Presented by George Skinner, Esq.

2703. Part of the intestines of a child, nine months old, in which is an intussusception of the ileum, cæcum, and ascending portion of the colon into the sigmoid flexure of the colon. The ileo-cæcal valve is the foremost part of the intussusception; and this circumstance gives the name of ileo-cæcal to this variety. The two canals in the middle of the preparation, into which apertures have been made, are the lower end of the ileum and the appendix of the cæcum.

The following account of the case, with an engraving of these parts, is given in Mr. Hunter's paper "On Introsusception" in the

Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge, vol. i. p. 103 (1793), and in his 'Works,' vol. iii. p. 587.

The patient was attended by Dr. Ash, and the body inspected after death by Mr. Home:—

"A. B., aged nine months, a large, healthy, well-looking child, who, as far as appeared, had never been indisposed from his birth, was seized with a strong spasm, stretching himself out suddenly, without having had any symptoms of previous ailment. Either during the spasm, or immediately after it, he passed a very large stool, and after that discharged at intervals small quantities of mucous slime, covered over with little specks of recent fluid blood.

"Dr. Ash visited him four or five hours after this attack, and found him in all other respects perfectly well; the child sucked heartily, but Dr. Ash, on observing his pulse to be less quick than is usual in children so young, his heat to be rather below the common standard, and, added to these, the small mucous and bloody discharges, suspected that mortification had taken place in the bowels, without being able to guess at the cause, as the child had laboured under no previous indisposition. In this uncertain situation various means of relief were attempted by purgatives, fomentations, the warm-bath, and different kinds of clysters, but without any good effect. On his first examination of the abdomen he felt (or thought he felt) a deep-seated fullness or hardness under the left hypochondrium; . . . his strength gradually sunk, and his pulse became gradually weaker, although he continued to take the breast eagerly till within a few hours of his death, which happened just sixty hours after the first spasmodic attack.

"The following were the appearances found in the dead body. Upon opening the abdomen, the small intestines, considerably distended with fluid contents, occupied so much of the cavity as to prevent any of the other viscera from being seen, and the mesentery was so much confined that the convolutions of the small intestines could not be readily followed. This confinement was found to arise from an intussusception of the ileum and its mesentery, together with the cæcum and ascending colon, into the descending part of the sigmoid flexure of the colon, the mesentery of the ileum being drawn up so obliquely across the root of the mesentery as to prevent the jejunum from having its usual freedom of attachment.

"The only part of the colon which could be seen was the sigmoid flexure, in which was distinctly to be felt a hard substance, consisting of the ileum and inverted colon. These parts being removed, for the purpose of a more accurate inspection of them, the sigmoid flexure of the colon was laid open, and was discovered to contain the cæcum and colon in an inverted state. The internal surface of these, when exposed, was found to have put on a dark red appearance, approaching to black; the whole appearance like a solid substance, rounded at the end, hanging loose into the descending colon, and about four inches long. Upon dividing the inverted colon, the ileum and appendix cæci were seen lying close

to each other, and their two openings found on the rounded end of the inverted colon leading directly into the sigmoid flexure; the portion of the ileum was a little twisted, but not in the least corrugated; it was rather stretched, and much pressed against the appendix cæci and its own mesentery by the surrounding colon; and a convolution of the appendix near the termination was so much pressed against the ileum as to make a mark upon it, and probably had compressed its sides so as to prevent any thing from passing. The portion of ileum was about four inches long.

“The inverted colon had drawn in the meso-colon, and a portion of the omentum that was attached to the transverse arch. The portion of the colon near the valve, which formed the extremity of the inverted part, was much thickened in its substance by the effects of inflammation, being four or five times its natural thickness: it was a good deal corrugated, or folded upon itself; the folds at this part seemed to adhere to one another, and form one mass. The inflammation and thickening only extending two inches, the gut becoming gradually thinner, till it was of its natural thickness and appearance; so that what was only four inches in length of intussusception, contained a considerably greater length of intestine.

“The sigmoid flexure, which was the containing intestine, had the natural appearance, but was dilated or relaxed; and the other contents of the abdomen were in a natural state, nor had the child any other apparent disease.”

2704. Portions of the small and large intestines, exhibiting an intussusception of part of the ileum, cæcum, and colon into the lower part of the last-named gut. As in the last specimen, the invagination apparently took place at the ileo-cæcal valve. The portion of colon which contains the intussusception is much dilated, and its muscular wall hypertrophied. The intussusception was probably of long duration.

From a man who died in Haslar Hospital, at the age of 27. Six months before his death he was seized with constipation of the bowels, which lasted for three days and resisted the most active treatment. Although he gradually recovered, the bowels remained in a most sluggish state, requiring drastic medicines to produce any evacuation. Two months afterwards frequent vomitings came on, with a constant sense of uneasiness in the abdomen, where, rather to the right of the umbilicus, a tumour was detected. Losing his appetite and strength, and becoming greatly emaciated, he gradually sank, the nature of the disease being only discovered at the post-mortem examination.

Presented by Sir Stephen L. Hammick.

2705. A portion of intestine, showing a similar intussusception. The appendix vermiformis is of considerable length and is not included in the intussusception.

From a man whose health had always been good until he was suddenly seized with a violent pain in the bowels, vomiting, constipation, and tumidity of the abdomen. He died seventy-nine hours after the commencement of the symptoms.

Presented by Sir Stephen L. Hammick.

2706. Portions of small and large intestine, exhibiting an intussusception of the last three inches of the ileum and of the cæcum into the ascending colon. The ileum having first passed through the ileo-cæcal valve is the most forward of the intussuscepted parts; this variety, therefore, is known as the iliaca-ileo-cæcal intussusception. A portion of glass is placed in the canal of the appendix of the cæcum, which lies near the end of the ileum, and has been carried into the colon with the cæcum, without being inverted. The mucous membrane of the intussuscepted portion of the ileum appears to have been gorged with blood, and lymph is effused on it; in the part above it, the Peyer's and solitary glands are very large.

From a child twelve months old, which had disordered bowels for a fortnight before the more serious signs of intussusception commenced. It died twenty-four hours after their first appearance.

From the Museum of George Langstaff, Esq.

2707. Part of the intestines of a child, with an intussusception of the lower portion of the ileum, the cæcum, and appendix vermiformis into the colon. The unusual contraction and folding of the walls of the invaginated portion, caused by its attachment to the unyielding mesentery, and in consequence of which a long piece of intestine occupies a very small space, is well seen in the preparation. Lymph has been effused on both the peritoneal and mucous surfaces of the ensheathed bowel.

2708. Part of the intestines of a child, five months old, in which

is an intussusception of the transverse and ascending portions of the colon, the cæcum, and about six inches of the ileum into the sigmoid flexure and the rectum. The ileo-cæcal valve is at the extremity of the invaginated intestine. The intussuscepted portion was strangulated, and in the recent state was black; it extended to within two inches of the anus.

The child had been healthy up to the time when the signs of the intussusception first appeared. It died five days afterwards. The enlargement of the distended intestine was distinctly felt in the abdomen at the seat of intussusception.

An account of the case, and an engraving of the preparation, are given with "A Case of Intussusceptio," by Thomas Blizard, Esq., F.R.S., in the 'Medico-Chirurgical Transactions,' vol. i. p. 169 (London, 1812).

Presented by Thomas Blizard, Esq.

2709. Part of the intestines of a child, in which, as in the preceding specimen, there is an ileo-cæcal intussusception. The greater part of the colon, the cæcum, and about four inches of the ileum are inverted and forced into the rectum.

The patient was a child 10 months old. The symptoms were faintness, with almost a loss of consciousness, depressed pulse, vomiting, and constant straining; nothing passing from the intestines except a little bloody mucus. The inverted intestine could, during life, be felt in the rectum, nearly protruding through the anus.

An account of the case, and an engraving of the specimen, are contained in a paper by Mr. Rowe in the 'London Medical Gazette,' vol. xv. p. 119 (London, October 25, 1834).

Presented by Joseph Swan, Esq.

2710. Part of the intestines of an infant, with an ileo-cæcal intussusception. The lower portion of the ileum, the cæcum, and the greater part of the colon have passed into the sigmoid flexure and rectum, which they greatly distend, forming a hard mass, about five inches in length and two in diameter. The intussuscepted portion is much congested, and on its mucous surface are some flakes of lymph. The peritoneum covering the left kidney was tightly stretched, and the stomach and duodenum were drawn away from their usual situation by the implication of the great omentum,

which, probably, explains the more than usual degree of curvature of the intussusception.

From a healthy unweaned infant, 8 months old. It was attacked with diarrhœa, which continued for seven days and was succeeded by collapse. It had frequent vomiting and a discharge *per anum* of mucus streaked with blood. After continuing in this state for three days, it died.

Presented by W. Pretty, Esq.

2711. The rectum of a child, four months old, distended by a large ileo-cæcal intussusception*.

The child had been ill three weeks before the first severe signs of intussusception were observed, and died six days after their commencement.

A further account of the case, and an engraving of the preparation, are in the 'Edinburgh Medical and Surgical Journal,' vol. viii. p. 129 (Edinburgh, 1812), with "Some Observations on Intussusception," by Mr. Howship.

Presented by John Howship, Esq.

2712. Portion of small intestine, about ten inches long, which formed an intussusception. The mucous membrane has lost its velvety appearance, and the whole mass is blackish and apparently gangrenous.

From a boy, 3 years of age. He became ill with abdominal pain, terminating in diarrhœa with bloody stools; ultimately, only pure mucus dropped away. Notwithstanding medicines, no relief was obtained, and the child appeared in a dying state for two or three days; but, ten days after the onset of symptoms, two lumbrici passed from the mouth, and two days later the portion of intestine preserved protruded from the anus. It was removed on the next day. The child took nourishment, and seemed better, but died about six days afterwards. No post-mortem examination was made.

Presented by John Prankerd, Esq., 1871.

2713. Portion of small intestine, about two feet in length, black and ragged, which was discharged *per anum*, probably after intussusception.

The patient, a soldier in the hospital at Antigua, recovered.

Presented by John Bourke Douglas, Esq.

* In accordance with the previous description, this specimen has been erroneously noted in the index as an intussusception of the large intestine.



2714. A portion of large intestine, with the cæcum and vermiform appendix, voided *per anum*. There are from ten to eleven inches of intestine, about a third of the calibre of the cæcum, and the entire tube of the appendix. Much of the surface is flocculent and in a state of disintegration. The blackish-brown substance over various parts is probably blood-pigment.

From a lad of 18 years, who suffered from typhlitis after eating unripe plums. The present specimen was passed by stool, without pain, and three years after the patient was in good health.

The case is reported in the 'Medico-Chirurgical Transactions,' vol. xlv. p. 77, "On some Affections of the Cæcal Portions of the Intestines."

Presented by Dr. F. G. Reid, 1860.

2715. A portion of intestine, apparently ileum, forty inches in length, which was passed *per anum*. Its surface is ragged and sloughy. It consists for the most part of the entire circumference of the bowel, with portions of the adjacent mesentery. At the upper end is a polypus half an inch long.

From a lady, aged 32, who, after previous good health, was suddenly attacked with occasional vomiting and abdominal pain. These symptoms recurred at intervals of two or three weeks, unattended by constipation, for three months, when they became much more frequent; and soon after, coincidently with the appearance of a movable abdominal tumour, complete intestinal obstruction ensued. This lasted for two or three days only, when the bowels acted again regularly and without the passage of any blood. The intestine was passed by the anus, enveloped in faecal matter and without blood, on the eighteenth day after the super-vention of the severe obstruction, and fifteen days after the resumption by the bowel of its normal habit. The patient recovered, and now, February 1884, is still alive and in good health. She occasionally experiences slight symptoms of obstruction, with sharp attacks of abdominal pain.

The case occurred in the practice of Mr. Hacon, and is recorded in the 'Transactions of the Pathological Society,' vol. xv. p. 113.

Presented by Dr. Peacock, 1876.

2716. A mass of tissue, partly muscular, passed *per anum*. Its surface is flocculent, and in some parts looks as if it had

formed the wall of an abscess, but its precise nature cannot be determined.

The patient was a married woman, aged 28, with a large abdomen, and thought by some to be the subject of ovarian disease. A tumour was attached to or involved the abdominal parietes, was semi-fluctuating but nodulated, and lay chiefly on the right side. After some weeks it suppurated, and an abscess was opened just below the umbilicus. This discharged copiously for two months, when fæcal matter came into the discharge. An attack of acute inflammation, lasting six days, was followed by the discharge of the mass from the rectum and by sudden diminution of the size of the abdominal tumour. The discharge ceased to be fæcal, and the abscess closed in two months, leaving a mass about the size of an orange in the abdominal wall, just below the umbilicus. This still remains, two years after the discharge of the mass, but the patient is in perfect health.

The appearance of the specimen is consistent with an intussusception, a slough of fascia after pelvic cellulitis or perityphlitis, or with a mass discharged from a sloughing ovarian cyst.

Presented by Lawson Tait, Esq., November 21, 1879.

2717. The end of an ileum, with the cæcum and part of the colon of a patient who, many years before death, voided a piece of intestine. Between three and four inches from the termination of the ileum there is a contraction of the colon, indicating, probably, the part at which the discharged portion of intestine was intussuscepted and separated. The canal of the colon at this part is only half an inch in diameter.

2718. A section through a portion of intestine, with invagination of the upper into the lower part. The invaginated bowel is exceedingly thickened, as by a morbid growth involving the whole circumference of the mucous membrane; its free surface is flocculent and superficially ulcerated.

Sections of the thickened mucous membrane had microscopically the structure of cylindrical-celled cancer. This was probably undergoing colloid degeneration, giving rise to the soft semitranslucent gelatinous patches seen in the specimen.

From a woman, aged 50, who was admitted into Guy's Hospital with chronic intestinal disturbance and a lump in the right flank. She passed a large shred of sloughing tissue.

Presented by Dr. Goodhart, 1883.

2719. Part of an ileum, in which is an intussusception of a portion about six inches in length. At the lower end of the intussuscepted intestine there is a firm tumour, of oval form, two inches and a half in length and an inch in diameter, attached to the mucous membrane and projecting into the canal of the ensheathing part of the intestine. A bougie is placed in the lower orifice of the inverted and intussuscepted intestine, by the side of the tumour. The coats of all parts of the intestine are thickened; they have been blackened by the solution in which they were placed.

The patient was 45 years old. She had been ill for three months before her death, and complained throughout of extreme pain in the left side and back, as if something within the abdomen were pressing the ribs and spine outwards. She had also occasional nausea and vomiting, with constipation and sensation of heat in the abdomen.

She was variously treated, without advantage, and gradually sank; vomiting of fæculent fluid supervened shortly before death.

All the organs, with the exception of the part preserved, were found to be healthy.

From the Museum of John Taunton, Esq.

2720. Part of the intestine of an old man, in which is an intussusception of the cæcum, ascending colon, and part of the ileum, protruded into the lower part of the colon. In the cæcum, which is the foremost of the protruded parts, there is a large, flat, lobular, and warty growth covering nearly the whole circumference of its mucous membrane: in the descent this growth has preceded the intestine. A piece of glass is passed into the lower orifice of the inverted cæcum, which is by the side of the tumour and appears narrowed by its pressure.

The patient was a robust man, 73 years old, who had spent nearly all his life in the navy. He had signs of disordered digestive organs long before those of intussusception appeared. These came on a week before his death. The liver and pancreas were diseased, but all the other organs of the thorax and abdomen appeared healthy, and no similar tumours were found in any other part.

Presented by Copland Hutchinson, Esq.

2721. A rectum (placed upside down) in which there is an intussusception of the upper within the lower part. At the lower (which now appears the upper) end of the intussuscepted portion a thick, firm, cancerous tumour extends nearly all round the intestine, as well as deeply into its coats, and projects far into its cavity. The adjacent mucous membrane is healthy.

The patient had long suffered with costiveness and, for eight months before his death, had pain in voiding his fæces, which were mixed with blood and pus. He had also hæmorrhoids, and prolapsus ani. He died with ascites from diseased liver.

After death, the large intestine above the intussuscepted part was found distended with fæces. The canal of the rectum was reduced by the tumour to a quarter of an inch in diameter; and it appeared evident that the intussusception had been produced by the fæces pressing upon the upper part of the tumour till they had inverted the portion of the intestine to which it is attached, and had forced it downwards.

From the Museum of George Langstaff, Esq.

2722. A vertical section of a bladder and rectum, showing an intussusception into the rectum due to a growth which projects from the wall of the bowel. The surface of the growth is villous, and it covers a considerable extent of the mucous membrane. The section has been made rather obliquely, so that the rectum appears to terminate almost immediately beyond the base of the bladder, the greater part being attached to the other section, which is preserved in the museum of Guy's Hospital. The bladder is healthy. The canal through the involuted part is free enough to admit a No. 10 catheter, and contains some thick coagulated mucus. The new growth consisted of villi, which were approximated, and formed regular spaces looking like gland-ducts; they were covered with columnar epithelium (cylindrical-celled cancer).

The case is recorded, with drawings and full description, in the 'Transactions of the Pathological Society,' vol. xxiii. p. 116.

Presented by Arthur E. Durham, Esq., 1872.

Intussusception in Animals.

2723. Portion of the small intestine of a Cat, in which are two intussusceptions within a short distance. In one the intussuscepted portion is carried upwards, in the other downwards. The coats of the intestine are healthy. *Hunterian.*
2724. An intussusception of a large portion of ileum within the cæcum and colon of a Dog. The walls of the intussuscepted portion are very thick and were turgid with blood. Its lower orifice is very small and is turned directly towards the attachment of the mesentery. *Hunterian.*
2725. Part of the intestinal canal of a Dog, in which is an intussusception of a portion of small intestine within the cæcum and colon. The intussuscepted portion is curved in more than a semicircle by the tightness of the mesentery attached to its border, and from the same cause its lower orifice is drawn backwards, and is seen, not at its extremity, but at its posterior surface. The mucous membrane of the whole intestine was full of blood.
- From the Museum of George Langstaff, Esq.*
2726. Part of the ileum of a Dog, with an intussusception. The containing intestine has been burst in nearly its whole circumference through distension by that within it; a portion of the latter is shown protruding through the aperture. Here, also, as in the last specimen, the intussuscepted intestine is unnaturally curved, and its lower orifice is turned backwards by the tightness of its mesentery.

In both these dogs the disease appeared to have been produced by the administration of *Turpethum Minerale* for the cure of distemper. The signs commenced almost immediately after they had taken it. In the first case the dog lived two days, in the second three days. In the latter, blood was effused into the abdomen from the ruptured intestine, acute peritonitis existed, and the mucous membrane of the intestine appeared highly inflamed; in the former, the effects were much less severe.

From the Museum of George Langstaff, Esq.

ARTIFICIAL ANUS AND FÆCAL FISTULA.

2727. Parts of a small intestine and of the adjacent wall of the abdomen, with an artificial anus formed after a strangulated hernia. The external aperture of the anus is three quarters of an inch long, and narrow; the skin around it is like mucous membrane and deeply depressed. The part of the canal connected with the false anus is a loop of small intestine, which is firmly adherent around the internal orifice of the passage, and of which the portions above and below the anus form an acute angle with each other.

Presented by Thomas Copeland, Esq.

2727 A. A portion of skin removed, some time before the death of the patient, from the margin of the artificial anus last described.

The history of the case was thus recorded by Mr. Hunter:—

“Hernia.

“An Italian was taken into St. George’s Hospital with a bubo-nocoele. It was an old rupture, which had been reduced at different times, but at last came down so large as not to allow of being returned.

“When he came in it had been down nine days, which gave rise to the appearances I observed in the operation. He had all the symptoms of a strangulated hernia, now reduced to the last extremity; therefore no time was to be lost.

“Upon exposing the contents of the sac, and cutting through the stricture, it was found to contain epiploon inclosing the gut. The epiploon on its external surface everywhere adhered to the sac, but these adhesions were recent; however, I was obliged to use force with my finger to separate them. When this was done I unravelled the epiploon, and exposed the gut, which adhered by its external surface everywhere to the epiploon. This I separated with ease, except at the lower part, where the adhesion was pretty firm; however, it gave way, but I found the substance of the gut was gone there, and that it only adhered round the hole in the gut. I cut off the whole of the epiploon; the whole of the intestines were reduced except where the hole was, and that part was fixed in the rings by two stitches.

“*Quære*, Would it not have been better practice not to have separated this union, but have reduced it in the united state, so that the epiploon might have become part of the gut; or have

reduced it all to [except?] this part, leaving it in the sac, and healing the parts over it.

"The wound healed up to the openings of the gut, which were very large, making a slit about three inches in length and about one inch wide; with the inside of the gut a little protuberant or inverted, with the fæces coming this way. When the parts were perfectly healed, and the cicatrix all round became pliable and soft, I tried to bring the skin on each side together over the opening; which I found I could easily do. I next endeavoured to prevent the fæces coming this way, by applying a large piece of sticking-plaster over the whole [hole?], over that a thick compress, and over the whole a steel spring-truss, to make a compression. I found by this means that the fæces found the lower orifice of the gut, and came away by the anus.

"Finding that if the fæces were prevented coming through the wound, that they then could pass the right way, I thought it was worth trying how far it was in my power to close up this opening entirely.

"I conceived that if I was to remove the edges of the skin all round the opening, and make it a fresh sore, I then might be able to unite them across the opening by the first intention: to which experiment he readily consented. It was now made a fresh wound all round for near half an inch in breadth: the two surfaces were brought together, and kept there with the hare-lip pins, as also with compresses on each side to support the pins; but part of the fæces worked through between the two surfaces and prevented the union, although the larger part of them went the right way.

"When the sore began to granulate, I next tried to unite them, as before; but, as before, the same cause of prevention took place, and it again proved unsuccessful. Upon the healing of this sore all round, the opening into the gut was much lessened by the contraction of the granulations.

"Finding that I could not succeed in the union by the first intention, nor by means of granulations, and finding that the opening was much lessened by the method above taken, I conceived if the same operation was repeated that I might be able to bring the opening into a very small compass, and probably might be able afterwards to close it entirely up.

"The man submitted to the operations the second time, and when this was healed the opening now in the skin was not above an inch long. He now left the hospital till the parts became fit for some other trial; but he made his complaint a means of support, which was probably an easier mode than that arising from industry; and on the benevolence of the nobility and gentry of this country he lived comfortably himself, and supported his sister, till his death, which was in consequence of a pulmonary consumption. Upon opening the body we found the gut which had protruded was the ileum, about two feet from the cæcum. Upon the inside of the belly it appeared as if the gut only adhered to the peritonæum as it passed across, for it almost went straight across without making an angle; for the gut was nearly as broad

or thick at this part as at the two adjacent loose parts; so the canal of the intestine was continued freely across the opening, and almost without any diminution. By introducing the finger into the external opening it came directly into the gut at this adhesion, and could from thence be pushed into either part of the gut.

“As a certain portion of the gut was lost by mortification at this part, and as also a certain portion more was retained down in the ring to admit of adhesions there, both of which we must conceive was nearly, if not wholly, the diameter of the gut—but most probably making the gut make an angle there, so as to make the opening appear double; one going into each part of the gut, and the angle forming the septum,—then it becomes a question, how came the gut to be so complete at this part? only seeming to pass across, making no angle, only having an opening on the adhering side, which communicated externally without the least appearance of there having been any loss of substance. The only way to reconcile these two contradictory facts is to suppose that Nature had been employed in perfecting the gut within the abdomen, and which, probably, was assisted by the stopping of the mouth of the external opening, with a view to force the fæces the right way, which, obliging that side next to the abdomen to stretch, did dilate; and which would dilate inwards towards the cavity of the abdomen: and this would also be assisted by every motion of the intestines within the abdomen; for every motion would be a pulling or dragging of the intestines inwards, so as to take off the angle. It had not pulled inwards that part of the intestine which lay in the wound, for there it still lay.”—*Hunterian MS.: Cases and Dissections*, No. 54.

On a drawing of the parts, preserved as No. 1384, it was written:—“The preparation is in the possession of Mr. Ford.” It was presented to the Museum by Mr. Copeland, Mr. Ford’s nephew, but no record could be found of the exact time or circumstances of the patient’s death.

In his lectures, Mr. Hunter used to say of this case—“A man in St. George’s Hospital had a hernia, for which I laid the integuments open, and then the sac, when I found that the intestine had a tendency to mortify and had formed adhesions to the sac. These adhesions, which were newly formed, I separated, when that part of the intestine which had adhered to the sac gave way, and the excrement came out: I therefore returned the intestine, and retained the torn part to the external wound, which became the anus; but there was still an open communication between the upper and lower parts of the gut, so that, could the opening in the groin have been stopped, the fæces would have passed the natural way. To produce this, I dissected off the skin round the opening, and then brought it into contact with ligature, compress, &c.; but this would not do, although the granulations, by their contractions, lessened the size of the opening. I therefore repeated this operation, hoping that at last I might quite close it; but all my efforts were in vain.

“Now, in the above case, I acted like a blockhead, being igno-

rant of what Nature was here doing; for (admire her work) she was forming adhesions of the intestines all round that mortified, whereby she would not only have preserved the continuity of the canal, but by this same process would have prevented any escape of the fæces: all which I prevented by separating those adhesions. If the case was to happen again, I should not separate the adhesions after taking off the stricture."—*Hunterian Reminiscences, by Mr. James Parkinson*, p. 41 (London, 1833, 4to).

2728. Portion of small intestine, which, in consequence of its extreme distension with air, could not be reduced from a hernial sac in which it was strangulated. An oblique incision, an inch in length, was therefore made into it, and it was left in the sac. Its surface is covered with lymph and false membrane. *From the Museum of Sir A. P. Cooper.*

2729. Part of a jejunum, with a false anus formed after strangulated femoral hernia. A portion of the intestine, about eight inches long, is inverted and protruded through the false anus. *From the Museum of John Howship, Esq.*

2730. Part of the left groin of a man, in whom an artificial anus was formed, after sloughing of a strangulated portion of the sigmoid flexure of the colon thirty years before death. The intestine protrudes from the aperture in the integuments in the form of a round flattened swelling, and its mucous membrane is so inverted that only a wrinkled transverse aperture remains in the middle of its surface: its exterior is closely adherent to the integuments and the interior of the inguinal canal through which it was protruded in the hernia. The portion of the intestine below the artificial anus is much smaller than that above it.

The history of the case is stated in the account of the diseased rectum of the same patient, No. 2591.

Presented by Sir William Lawrence.

2731. Portion of small intestine, which, after a wound dividing nearly its whole circumference, became adherent to the margins of the corresponding wound in the abdominal wall, and had long opened through an artificial anus. Quills are

passed into the orifices of the intestine above and below the external opening; the mucous membrane protrudes in a circle from each of the orifices, which are nearly an inch apart. A portion of liver is adherent to the intestine close behind and above the artificial anus.

Presented by Sir William Blizard.

2732. A portion of colon, showing an artificial anus, which was made, by operation, nineteen months before death. The aperture measures about half an inch vertically, but is very narrow in horizontal measurement. Externally its orifice is puckered and ulcerated, and here the mucous membrane of the colon may be seen to be continuous with the integument, which, around the point of junction, is denuded of epidermis.

From a married woman, aged 43, the mother of ten children. A tumour formed in her pelvis involving both the vagina and rectum, and fæces soon began to pass through the upper part of the vagina. The colon was opened, which gave her great relief for more than a year. Three months before her death the abdomen was as large as at the full term of pregnancy; she suffered severe pain. There was much prolapse of the bowel at the artificial orifice, but this did not interfere in the least with the passage of the fæces. After death only a partial examination of the body was permitted. The uterus, vagina, and rectum were involved in a new growth to such an extent that it was impossible to determine where the disease had originated.

Presented by William Allingham, Esq., 1867.

2733. Part of the right loin of a Sheep. A circular aperture about one eighth of an inch in diameter, and surrounded by wool, may be seen in the integument. This aperture leads into the interior of the colon; the walls of the intestine are hypertrophied above and atrophied below the aperture, and its calibre at the opened part is abnormally narrow.

The parts were sent from New Zealand, where the artificial anus was produced by the repeated attacks of a Parrot (*Nestor notabilis*). This bird is in the habit of settling on the back of a Sheep, and pecking into the integuments day after day till the bowel is

opened. Sheep thus attacked generally die in a few months. (See Trans. Path. Soc. vol. xxi. p. 386.)

Presented by H. A. de Lautour, Esq., 1880.

2734. The parts connected with an artificial anus, through which a portion of small intestine opened externally near the umbilicus. The preparation exhibits, at the back, the orifice of the artificial anus, with a small portion of the abdominal walls; in front of these is the portion of small intestine which opened externally, and which is closely adherent to the abdominal walls as well as to several portions of intestine lying near it.

Mr. Hunter left the following record of the case:—

“Case of an Abscess formed between the Intestines and Abdomen, into which an Intestine opened; and which opened externally through the Navel.”

“The appearances on opening the body of Master Calthrop.

“As it was imagined there must be an adhesion of the intestine to the navel, which evacuated its contents through this part, I first made a circular incision round the greater circumference of the abdomen, so as to get into the cavity at some distance from the adhesions; but was disappointed, for I could not find any cavity, excepting on the left side of the navel, where I came into a cavity of about the size of an egg, whose inner surface appeared like the inner surface of an abscess, and which proved to be such.

“The whole parietes of the abdomen were found adhering everywhere—to the liver above, the epiploon below, and it again to the intestine behind; as also to the whole fore part of the bladder of urine, which was large, high, and full; for, from its universal adhesions, it could not empty itself. The whole of the intestines adhered to each other; but the anterior surface of the stomach did not adhere to the concave surface of the liver.

“On separating the parietes of the abdomen all round from the parts underneath, towards the navel, I observed a hole in the intestine just behind the navel, opening into the cavity of the abscess above mentioned, but I did not expect that this was the mode of communication; however, by introducing a probe through the opening in the navel, it passed directly into this abscess, so that the contents of the gut got first into this abscess, and then out by the passage in the navel.

“There was a great deal of strumous deposit between the intestines, in form of lumps; some as large as a large filbert, uniting two or more intestines together: the same on the liver, and a good many like peas in the epiploon. These were all of the tubercle kind, a mixture of coagulable lymph and curd.

“The mesenteric glands were only slightly diseased.

“In the present case it may be difficult to say which was cause and which was effect, viz., whether the bursting of the intestine became the cause of the adhesions, or that they were equally effects of the same or original cause; which last is most probable, for the bursting of the intestine would most probably have hindered adhesions from so universally taking place; yet, if the adhesions had taken place first, this cavity could not have formed; therefore most probably happened nearly about the same time: for the adhesions being either ready to take place, or just had taken place, hindered the extravasated contents of the intestines from spreading further, only keeping this space from uniting, forming a reservoir, which produced considerably more inflammation, which secured it; and then suppuration and ulceration in this cavity, which brought the mixed matter to the navel. The orifice in the gut not closing, continued to keep the passage in the navel open.

“It may be remarked as a curious fact, that most abdominal suppurations open at the navel, especially those that do not arise immediately from the true suppurative inflammation setting down on a part. Thus we have extraneous bodies producing slow inflammation, and slow suppuration taking that course.

“Most children who have died in the abdomen, probably extra-uterine cases, have come that way. Some ovarian cases also have come by the navel. From these facts it would appear that ulceration more readily takes place there than in any other part.”—*Hunterian MS.: Cases and Observations*, No. 64.

2735. Portions of small intestine and of the adjacent abdominal wall. A large part of the intestine is intimately adherent to the wall of the abdomen; its cavity is laid open from behind. In the antero-lateral wall of the intestine, a smoothly defined oval aperture, about one-third of an inch in diameter, leads to a short fistulous passage, which traverses the abdominal wall and opens externally at the bottom of a large, deep, and irregular ulcer in the thickened integuments. This ulcer, judging by the hair growing near it, was probably situated in the groin. Immediately below the aperture in its walls, the canal of the intestine is suddenly contracted to one-third of an inch in diameter, and then, bending abruptly, again enlarges to nearly its natural size. The coats of the intestine appear healthy at every part except at the aperture in them.

From the Museum of Sir A. P. Cooper.

Other specimens in the Museum illustrative of Herniæ, &c., are:—Nos. 2439 and 2549 B; and of Colotomy and Artificial Anus—2427 C, 2558, 2571 B, 2581.

Series XXVI. INJURIES AND DISEASES OF THE LIVER.

Injuries.

Rupture : 2736.

Degeneration.

Fatty Infiltration : 2737-8.

Lardaceous : 2738, 2739, 2754 A.

Inflammation.

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Parasitic Diseases.

Hydatid : 2775 to 2800.

Flukes : 2801.

Diseases of Blood-Vessels of Liver.

Phlebolithes : 2802, 2803.

Injuriés.

2736. A liver, broken completely through its substance, so that its two portions are held together by the coronary ligament alone. The fracture extends in a vertical plane from before backwards by the side of the gall-bladder.

The injury was produced by crushing, and the patient, a man 40 years old, survived it two days.

Presented by Edward Stanley, Esq.

Degeneration.

2737. Section of a liver, of which Mr. Hunter left the following description :—

"February 9th, 1760.—I opened the body of Mrs. Johnston, with Dr. Pringle. There were about two gallons of water in the abdomen. The liver was somewhat contracted, and harder than common, and very irregular, both on its surface and internal structure; seemed as if made up of different substances. These knotty parts were of a white colour, and the intermediate substance of a yellow. The gall-bladder and ducts clear; pancreas contracted, and harder than common. The kidneys soft, whitish, and the pelvis filled with a matter like common pus in an abscess, but there was no ulceration. Epiploon beginning to be shrivelled up at the lower edge, which is common in an ascites; a very fat mesentery: indeed the whole body was so. The uterus had two small bodies of the steatomatous kind, some blood in its cavity; but she had had no menses for a long time. The lungs very sound; no adhesion; a little water in the cavity of the pleura, and some in the cellular membrane of the lungs themselves, which had subsided to the lower part of the lungs, and was so loaded with water as almost to sink in water.

"The case, before death, Dr. Pringle has.

"I took a piece of the liver home with me, to try some experiments with it. I observed that the knife that I cut the liver with was besmeared with a white substance. I suspected that this was fat, therefore held it to the candle, and it melted. I then took some small pieces and boiled them, and extracted near one third of oil out of them, of a very yellow colour, much yellower than the other fat of the body, which was something acid, as in the boiling; it appeared white while in the liver and upon the knife; but, perhaps, it was owing to the gall in the liver mixing with it; upon which I took some tallow, which is white, and boiled it in water with some gall, and it became of a yellowish colour.

"By Dr. Pringle's desire I tried the following experiments:—

"On Monday I put six pieces of the liver into the following menstrua. The common dilutant was water; and the same quantity in each, which was seven ounces.

- | | |
|--------|---|
| " 1st. | A slice into 7 ounces of common water by way of standard. |
| 2nd. | " " distilled. |
| 3rd. | " " 1 ounce of vinegar. |
| 4th. | " " 3 p. sal. tar. |
| 5th. | " " 3 iv. sapon. |
| 6th. | " " lime-water. |

"They stood by the fire for seven hours at first; then let be cold. On Thursday following, which was three days, the first had a putrid smell. On the Friday following, the second and sixth began to be offensive; the others at that time only smelled of the ingredients. The piece that was put in the soap became white in the oily parts. The vinegar made its piece green, which was owing to the bile being mixed with the acid. The others became somewhat darker."—*Hunterian MS.: Dissections of Morbid Bodies*, p. 80, No. 59.

2738. A section of a liver affected with lardaceous degeneration. It is firm and homogeneous, and either of a uniform semi-translucent grey colour, or grey speckled with yellowish points, according as the change is complete or associated with fatty degeneration.

From a patient who died with chronic phthisis.

Presented by Dr. Goodhart, 1874.

2739. A section of a liver slightly affected with lardaceous disease. It has been steeped in anilin violet, which has stained the liver-substance most deeply in small patches with irregular arborescent edges. These are the seat of the greatest degeneration (the dye having an affinity for the diseased tissue), and probably correspond to branches of the hepatic artery.

Presented by Frederic S. Eve, Esq., 1884.

Inflammation, Abscess, and Syphilitic Disease.

2740. "Section of a liver that had thickened without inflammation similar to tumour."—*Hunterian MS. Catalogue.*

2741. Portion of the liver of a woman, the whole of which, both surface and section, is minutely granular. The intervening substance is paler than is natural, and fibrous looking, and presents an appearance of numerous small cysts in it, like sections of minute hepatic ducts dilated, but more probably cavities left by the molecular disintegration of the hepatic cells. *Hunterian.*

2742. Section of a liver, the substance of which is pale, indurated, contracted, and formed into round and oval nodules of various sizes, which project upon the external surface of the liver, and, on the surface of its section, appear separated by thin partitions of cellular tissue.

The specimen affords an excellent example of the change termed cirrhosis of the liver, or hob-nailed liver.

Hunterian.

2743. A similar specimen. It shows, also, slight thickening and opacity of the peritoneum, especially in the suspensory ligament, and a characteristic roundness and nodulated unevenness of the anterior margin of the liver.

The disease had existed many years, and, after numerous attacks of jaundice, ended with ascites and anasarca.

From the Museum of John Heaviside, Esq.

2744. A liver in an extreme state of cirrhosis of syphilitic origin. Its surface is deeply fissured and lobulated by rounded projections of considerable size ; and its section, shown on the posterior aspect of the specimen, is traversed by thick bands of fibrous tissue.

The portal vein has been injected blue and the hepatic artery red.

Presented by C. Stewart, Esq.

2745. A liver affected with cirrhosis. It is much contracted in size ; its surface is irregular or granular, and numerous organized adhesions have formed between the capsule and adjacent parts. The ductus venosus is still widely patent. The portal vein has been injected.

From a man aged 21, who had suffered from dysentery for a long time. The post-mortem examination revealed dysenteric ulceration of the colon, lardaceous disease of the bowel, chronic peritonitis, and adherent pericardium. There was no ascites during life, and this is explained by the conditions found after death ; a vein of large size, in the position of the ductus venosus, conveyed the injection from the portal vein directly into the vena cava inferior ; this and numerous vessels allowing the free passage of blood into the adhesions upon the surface of the liver formed collateral channels sufficient to relieve the portal vein.

Presented by Dr. Goodhart, 1876.

2746. A similar specimen, with the same nodulated appearance of the outer surface as in the preceding instances. The peritoneal coat is thickened, and shreds of false membrane are attached along the anterior margin of the liver.

Presented by Sir James Paget.

2747. A liver in an extreme state of cirrhosis. The gall-bladder is contracted and almost completely embedded in the surrounding nodules of the liver. Its coats are thickened, and the bile-duct is greatly distended by laminated inspissated biliary matter. The surface of the liver has a very peculiar appearance from the extremely nodular form of the uncontracted parts. The section is finely areolated and cavernous, a condition probably at least in some measure due to the cavernous arrangement of the new blood-vessels formed in the fibrous tissue of Glisson's capsule.

From a patient who died at Surinam.

Presented by Dr. Richard Quain, 1866.

2748. A section of a liver from a syphilitic subject. The surface is rendered irregular by the contraction of large gummatous masses, which have undergone a partial calcareous degeneration. Large fibrous tracts traverse the surface of the section, between which are some still healthy hepatic lobules, and near the centre of the section is a largely dilated bile-duct.

Presented by Dr. Goodhart.

2749. A portion of a liver with a syphilitic formation or gumma at the lower and right corner of the section. A large yellow fibrous mass, of which this is only a portion, was seated in the right lobe, and had undergone some central softening. Smaller masses occupied different parts of the liver, the whole of which had undergone a diffused fibroid change.

From a man aged 29. He had had a chancre and suppurating inguinal glands, but no symptoms of syphilis. He was under treatment for marasmus, diarrhoea, ascites, and jaundice. One of the testes contained a gumma.

Presented by Dr. Moxon, 1872.

2750. Portion of a liver and of the wall of a large circumscribed abscess in it. The wall is, in parts, fasciculated, and is lined with a thin and nearly smooth layer of firm lymph closely attached to the substance of the liver. *Hunterian.*

2751. Portions of a liver and right lung adhering together through the medium of the diaphragm. Bristles are passed, through several bronchial tubes, into the cavity of an abscess in the liver, the fluid from which was expectorated through the lung.

Mr. Hunter has recorded the case as—

*“The Case and Appearances, after Death, of Mr. Bertram,
March 2nd, 1772.”*

“About five months ago he was attacked with a violent pain in his right side, which was imagined to be a pleurisy, as he had a difficulty in breathing. The situation of this pain was on the right and towards the lower part of the thorax. He was bled four times, and a blister applied to the part affected. The complaint still continuing (although not with such violence) he was sent into the country, and ordered a low diet, with milk and some brandy put into it. He went on for some months in this way, but growing thinner. The cough became violent; a spitting of phlegm, shortness of breathing (which was increased when he lay on his left side), all took place. About three months and a half after the attack, and about six weeks ago, he observed a swelling on his right side, where the pain was, and came to town upon that account.

“About five weeks ago I saw him, with Dr. Fordyce, and we found a plain fluctuation of fluid: but at the part that was swelled, I could not feel the ribs. I could trace the seventh, eighth, and ninth ribs from behind down to the swelling, but there lost them. It was agreed that this fluid should be let out, and the day following was the time appointed. When we went next morning we found him on the close-stool, and while there he had been attacked with a violent fit of coughing, and a spitting up of a bloody matter, which came so fast as to threaten suffocation. It was imagined by us both that the abscess had opened into the trachea, and that no time was to be lost.

“We opened the abscess, and evacuated between four and five quarts of a duskish-coloured matter: the quantity astonished us. Upon my introducing my finger into the orifice I found two of the ribs bare all round, so that the matter lay more superficial than the ribs, and had pushed away the external muscles and skin from them at this part, which was the reason of my not feeling of them at this part. The matter by the mouth ceased very soon after this other discharge. He went on discharging large quantities of this kind of matter, with large sloughs. He often thought that the air which he drew in by his mouth in inspiration was partly discharged by the wound, in expiration. He became weaker and weaker, and died on the 1st of March, 1772, five months after the first attack, and five weeks after the opening of the abscess.

“On opening the abdomen and thorax we found the lungs of the right side adhering to the ribs of that side, at the lower and

outer edge; and to the diaphragm, wherever it came in contact with that muscle: and also the liver to the abdominal muscles on the right side, as low as the lower edge of that viscus. On tearing the fore part of this adhesion we came into the abscess, which appeared to be a large cavity, made by the liver on the inside, the abdominal muscles and ribs on the outside, and the diaphragm above; but it evidently had formed originally within the substance of the liver, near to the right side.

“This abscess, like all others, was led to the external surface of the body, but before it could effect this the liver was obliged to adhere to the diaphragm above, and to the abdominal muscles on the right. As the diaphragm took the disposition of ulcerating on its abdominal side, it took on the adhesive disposition on the opposite side, and thereby it adhered to the lungs above, and to the ribs near to its attachment to them. When the diaphragm gave way through its whole thickness, and near to its insertion into the ribs, then the matter came in contact with the lower surface and lower edge of the lungs, also with the inner surface of the ribs and intercostal muscles. Then these began to ulcerate together, or at the same time; but as the external muscle and skin upon the ribs were still remaining to ulcerate, it retarded the matter’s coming that way, and the lungs having been exposed with the intercostals, they gave way nearly with these muscles, and therefore the abscess, of course, first opened, and it may be said externally into the cells of the lungs, or into any cavity where a continuation of these adhesions could not precede a suppuration, as it could not in the cells of the lungs.

“He had, besides, two other very large abscesses in the liver’s substance, with many small ones, that were in contact with the diaphragm, one of which was almost come in contact with the surface of the lungs, so that the diaphragm was nearly gone at this part. As the seat of the disease was in the liver originally, and the lungs only affected as the other surrounding parts were, and as we had not the least conception of this, I enquired, after his death, whether he ever had any complaint of a pain in his shoulder. They told me he had the rheumatism pretty severely in his right shoulder since he had this complaint.”—*Hunterian MS.: Dissections of Morbid Bodies*, No. 154, p. 252.

2752. A liver of natural size, soft consistence, and pale colour, of which the surface is roughened by numerous shreds of adhesions. Upon the convex surface are three small abscess-cavities, the irregular opening of each being surrounded by a light brownish-yellow zone of altered hepatic tissue, which, in the recent state, was hyperæmic. In the section two other small abscess-cavities, about a quarter of an inch in diameter, are exposed to view. The abscesses

contained thick greenish pus. The parenchyma of the liver generally was soft and greasy ; there was no amyloid reaction.

From a patient who died with dysentery. The recent appearances of the specimen are shown in a drawing preserved in the College Museum.

Presented by Sir Joseph Fayrer, 1883.

2753. Parts of a lung and liver, the corresponding surfaces of which were adherent through the medium of the diaphragm. An abscess which formed between the liver and the diaphragm made its way by a large ulcerated aperture through the diaphragm and the adherent part of the lung. The cavity of the abscess is exposed by separating the surrounding adhesions between the liver and the diaphragm, and turning the liver downwards. Part of its internal surface is formed of a smooth layer of lymph deposited on the liver ; the rest has a flocculent sloughing appearance. The substance of the lung around the ulcerated aperture in its base, through which the fluid of the abscess was discharged, appears to have been infiltrated with serum and pus.

The patient, a man 50 years old, had signs like those of acute pneumonia, with purulent expectoration, but the chief seat of pain was in the right hypochondrium. A short time before his death he was seized with bilious vomiting, and the expectoration of fetid pus. There were tubercles and tuberculous cavities in the lungs. The liver was large, and its substance was of a pale yellow colour.

From the Museum of George Langstaff, Esq.

2753 A. A portion of a liver, with a part of the diaphragm and chest-wall. The upper surface of the liver is occupied by a large abscess-cavity, the contents of which had passed into the right pleural cavity by an opening in the diaphragm close to its attachment to the ribs. The convex surface of the liver is adherent to the diaphragm, which forms, with the ribs, the upper and outer wall of the abscess-cavity. One of the ribs is devoid of periosteum.

The specimen was taken from the body of a patient who had suffered from dysentery.

Presented by Sir Joseph Fayrer, 1880.

Tubercle.

2754. Portion of liver, from a patient who died with pulmonary phthisis. Minute tubercles are thickly scattered through its substance, and the intervening tissue exhibits fatty degeneration. *From the Museum of George Langstaff, Esq.*

2754 A. A section of the left lobe of a liver which has undergone amyloid degeneration. The cut surfaces show several deposits of caseous material, the largest of which is two inches in its longest diameter, and projects prominently from the superior surface of the organ. The deposits have, on section, a honeycomb appearance, from breaking-down of the tuberculous material at several small points.

In histological structure the deposits presented the ordinary characters of tubercle. Some small grey nodules were scattered beneath the mucous membrane of the bladder, which were found on microscopic examination to be miliary tubercles.

From a lad, who died with amyloid degeneration of the abdominal viscera. He had previously suffered from symptoms of tubercular disease of the genito-urinary organs. There was no evidence of syphilis.

Cicatricial contractions of the upper and lower ends of the right ureter, from old ulceration, were found, and hydro-nephrosis of the corresponding kidney, but there was no tubercular ulceration.

Presented by Frederic S. Eve, Esq., 1882.

2755. Part of the liver of a Baboon, in which there are several circumscribed deposits of pale, firm, tuberculous matter, of various sizes and forms. Most of them lie immediately beneath the capsule of the liver.

From the Museum of George Langstaff, Esq.

2756. Part of the liver of an Agouti, in which there are numerous small masses of a white, probably tuberculous, substance. *Hunterian.*

2757. The liver of a Cape Hyrax, with numerous yellow tubercular patches in it. These consist of small grain-like tubercles. *Presented by the Zoological Society, 1865.*

Cysts and Morbid Growths.

- 2757 A. A section of a cyst, six inches in diameter, attached to the lower edge of a liver. The capsule of the liver passes over the cyst, the wall of which is composed of fibrous tissue, lined by a single layer of flat epithelial cells; the cells were undergoing colloid degeneration. Septal cords and membranes were found traversing the cavity of the cyst. It contained a straw-coloured alkaline fluid, rich in albumen and chlorides.

The specimen was taken from the body of a woman, aged 38 years, who died from the results of a fracture of the skull.

For a further account of the case, see 'Transactions of the Pathological Society,' 1881-82.

Presented by Charles Stewart, Esq., 1882.

2758. A cyst from the abdominal cavity, which was connected with the liver. It has a tough and fibrous wall, and a corrugated and opaque lining. Its outer surface is shaggy, from the remnants of the adhesions which it had formed with the abdominal viscera.

It contained about "a bucket and a half" of clear fluid, which was lost in its removal. A "floating tumour" had been observed in the abdomen for years and, being diagnosed as ovarian, its removal was attempted, but its connections with the liver and abdominal parietes prevented this being done. It contained no hydatid debris. Its most probable origin appeared to those who saw it at the time to be in or immediately beneath the fibrous capsule of the liver.

The case is recorded in the 'British Medical Journal,' 1874, vol. ii. p. 700.

Presented by Dr. G. Ward Cousins, 1874.

- 2758 A. A small portion of the convex surface of a liver, with a cyst about the size of a pea lying beneath the peritoneal covering; it contained a clear watery fluid. Numerous similar cysts were scattered over the convex surface, and a few within the substance of the liver.

On microscopic examination, dilated tubules, lined with small

cubical epithelium, were observed near that portion of the cyst-walls formed by the substance of the liver. They could not be shown to communicate with the cysts; but it is probable that these may have been formed from similar tubules, which have been described either as mucous glands, or as vasa aberrantia of the bile-ducts.

Presented by Frederic S. Eve, Esq., 1883.

2759. Portion of the liver of a woman who had carcinoma of the breast for several years. On one surface of the specimen is the section of a round tumour imbedded in the healthy substance of the liver, and presenting the characters of the common hard cancer of the breast—pale, compact, glistening, and somewhat transparent, with traces of shining white fibres scattered through its substance.

From the Museum of George Langstaff, Esq.

2760. Section of a liver, and of several large, round, firm, and compact, but not hard, cancerous tumours imbedded in it. The vessels of the liver have been injected, and its texture looks healthy; but none of the injection appears to have entered the substance of the tumours.

From the Museum of Sir A. P. Cooper.

2761. A similar specimen. The injection appears to have passed into a few vessels in the morbid substance, which is also traversed by some branches of the hepatic veins of considerable size.

From the Museum of Sir A. P. Cooper.

2762. A similar specimen, dried, and showing more clearly the few blood-vessels passing into the morbid substance.

From the Museum of Sir A. P. Cooper.

2763. Section of a liver, greatly enlarged by the growth of many soft filamentous medullary tumours in it. Its external surface is smooth, and none of the tumours project beyond it, but the outlines of many of them can be seen through the external investments of the liver. The blood-

vessels have been partially injected, and the tumours appear more vascular than the intervening substance of the gland.

From a woman, 50 years old, who for many months had obscure signs of disease of the liver. A natural quantity of bile appeared to be secreted.

Presented by John Howship, Esq.

2764. Portion of a liver, the natural substance of which is almost entirely replaced by numerous large, soft, medullary tumours. From the projection of these outwards the surface has a lobulated appearance. The entire organ weighed ten pounds and three quarters. The gall-bladder is completely filled with calculi.

From a married lady, 53 years of age, of robust frame and exceedingly corpulent. Other tumours, apparently of malignant nature, formed in the adipose tissue distributed over various parts of the trunk and extremities, especially the left arm, both fore-arms, and the left thigh. After death no disease was found in any of the abdominal viscera, except the liver.

Presented by Jonas H. Pope, Esq., 1850.

2765. Section of a liver, in which there are numerous cancerous tumours, soft, flocculent, and with blood effused in them. The surface of the liver is nodulated by the tumours projecting from it, and false membrane is attached to it in several places.

The patient, a man 65 years old, had signs of diseased liver for many years. A few months before his death the liver became very large, jaundice and ascites supervened, and he occasionally vomited blood. After death, signs of recent acute peritonitis were found, and the vena cava and many of its branches were full of cancerous matter.

From the Museum of George Langstaff, Esq.

2766. Portion of a liver, containing several tumours, probably of a medullary kind, of which some are softened.

Hunterian.

2767. Portion of a liver, in which are numerous round and irre-

gular masses of a soft, probably medullary substance. The masses nearly fill the liver, and project upon its surface : many like them have been removed from smoothly circumscribed cavities in its substance, in which they were imbedded ; some appear to be surrounded by distinct membranous capsules. *Hunterian.*

2768. Another portion of the same liver. *Hunterian.*

2769. Sections of a liver and of several round masses of soft, spongy, filamentous, medullary and melanotic substance imbedded in it. The substance of the liver immediately surrounding each mass appears condensed, so as to form a kind of thin capsule around it : the rest of the liver is healthy.

From the same patient as the tumour in the axilla, No. 461.

From the Museum of George Langstaff, Esq.

2770. Sections of a liver, in which are melanotic deposits of various sizes, from the minutest dots to masses of nearly an inch in diameter. The greater part of the melanotic matter appears to have been deposited in soft medullary tumours, which were originally pale, but are now of various shades, from pale grey to black, according to the quantity of black matter which they contain.

From the Museum of George Langstaff, Esq.

2771. A portion of a liver, affected with melanotic sarcoma, which has been injected. Both the surface and section are studded with circular nodules of black growth, into which the vermillion injection has only partially entered. The nodules vary in size, and consist of cells which cannot be distinguished from the normal liver-cells except by their excess of pigment. *Presented by Francis Kiernan, Esq., 1871.*

2772. A portion of liver affected with melanotic cancer. A large circumscribed mass is seen in the substance of the organ

and limited by condensed liver-substance. Near it are several smaller masses.

Presented by Francis Kiernan, Esq., 1871.

2773. A portion of liver affected with melanotic sarcoma. A large mass occupies the right lobe of the organ. It is hardly so pigmented as usual, and has softened into a cyst at one spot. The vessels are injected red and blue.

Presented by Francis Kiernan, Esq., 1871.

2774. A portion of the liver of the same woman as the melanotic eye, No. 4006. It contains two circular masses of melanotic substance, both of which are completely black; one of them is one-eighth, the other two-thirds, of an inch in diameter. The rest of the liver appears healthy.

From the Museum of George Langstaff, Esq.

Parasitic Diseases.

2775. Part of the liver of a woman, containing an enormous cyst which was filled with hydatids. The cyst measures, in its present collapsed state, nearly nine inches in diameter; it is formed of tough tissue, a line in thickness, and rough with lymph deposited upon its inner surface. Part of the liver is shown expanded upon the cyst, and the diaphragm is adherent to its surface. Numerous hydatids lie beneath it, and the largest of them, inverted, has its inner surface beset with minute cyst-like bodies, probably groups or clusters of echinococci.

Hunterian.

2776. Several hydatids of various sizes, from a woman's liver.

Hunterian.

2777. Hydatids, from a human liver.

Hunterian.

2778. A single hydatid, from a human liver.

Hunterian.

2779. Part of a liver, and of a cyst formed in its substance, which cyst contained an acephalocyst. The cyst, when distended, must have been at least six inches in diameter. Its walls are a line in thickness; it was externally closely attached to the substance of the liver (of which, however, very little is preserved) and to the diaphragm; where these attachments have been removed its external surface is smooth and finely flocculent. Internally the surface of the cyst is uneven: on many parts it is coarsely nodulated; and on many, thin films and shreds of lymph are attached to it.

From the Museum of George Langstaff, Esq.

2780. The acephalocyst hydatid from the cyst last described.

From the Museum of George Langstaff, Esq.

2781. Section of the left lobe of a human liver and of a hydatid cyst partially imbedded in it. The wall of the cyst next the liver shows a condensed layer of liver-substance forming a capsule. Within this is the mother-cyst, and many small daughter-cysts budding from its walls.

From a female aged 19, who had never complained of any illness except an occasional pain in her side. She was three months advanced in pregnancy. Suddenly she was seized with what appeared to be an epileptic fit, and she died within an hour. No disease was found in any organ except the liver.

Presented by William J. Bowden, Esq., 1864.

2782. A hydatid cyst from a liver, contracted and hardened by the deposit of cretaceous matter within its outer covering. The cyst of the echinococcus, contracted and shrivelled, was contained in the interior together with a small quantity of fluid, and in this were found some hooklets.

From a man aged 32, who died of intestinal disease.

Presented by Dr. Peacock, 1876.

2783. Portion of a liver, at the border of which, and partly imbedded in its substance, is a thick and tough-walled hydatid

cyst, of spheroidal shape, measuring nearly two inches in its chief diameter. *Presented by Joseph Swan, Esq.*

2784. Portion of a liver, with a section of a spherical cyst imbedded in and closely adherent to its substance. The walls of the cyst are half a line in thickness, fibrous, shining, tough, and compact. The cavity of the cyst contains a substance like mortar. It is probably a cyst in which acephalocyst hydatids died, and earthy matter had been deposited among their remains. *From the Museum of John Heaviside, Esq.*

2785. A similar preparation. The walls of the cyst have been exposed by removing the surrounding part of the liver; they are thicker and harder than those in the preceding specimen, and the mass of mortar-like substance which the cyst contains is more compact.

From the Museum of George Langstaff, Esq.

2786. Portion of a liver, with a section of a spherical cyst, more than three inches in diameter, partially imbedded in its substance. The walls of the cyst are thick, and contain an abundant deposit of calcareous matter. It encroached upon the right lung, pushing up the diaphragm, which was adherent both to the lung and to the cyst.

From a man who died at the age of 69, of disease of the urinary organs consequent upon enlargement of the prostate. He was not known to have suffered, during life, from symptoms referable to the liver.

Presented by D. de Berdt Hovell, Esq.

2787. Portion of a liver, having imbedded in its substance a spherical cyst about the size of an orange. Within the cyst are the shrivelled remains of the wall of a hydatid, and a considerable quantity of coagulated lymph.

Presented by Messrs. Robarts and Jay.

2788. Section of a liver containing an old hydatid cyst, three inches in diameter. The cyst is full of tough membrane

which is covered externally by a thin layer of deep orange-red pigment.

The case is alluded to in a footnote in the 'Medico-Chirurgical Transactions,' vol. xxi. p. 336.

Presented by Dr. Thurnam, 1871.

2789. A hydatid from a liver : it was discharged through the lung. *Hunterian.*

This specimen was probably taken from a patient whose case is recorded in "A case of hydatids discharged by coughing, related in a letter from John Collett, M.D. . . . to Dr. Baker," in the 'Medical Transactions, published by the College of Physicians in London,' vol. ii. p. 486 (London, 1772, 8vo). The patient was a lady, 37 years old. About four years before the discharge of hydatids commenced, her health began to decline ; she had oppression of the breath, slight œdema of the ankles, and cough. After these symptoms, in the course of four months she coughed up 135 hydatids, all ruptured, some tinged with blood. At the time of the publication of her history she appeared to be recovering. The relation of the case is followed by some general remarks on hydatids, several of which remarks, Dr. Baker says, he owed "to the favour of Mr. John Hunter."

2790. The liver of a Monkey, to the surface of which are attached several large transparent membranous cysts, each of which contains one or more hydatids. *Hunterian.*

2791. Portion of the liver of a Cat, in the substance of which, and intimately united to it, is a thin opaque cyst containing a single acephalocyst hydatid. *Hunterian.*

2792. Another portion of the same liver, containing a similar cyst and hydatid. The cyst is larger than in the preceding specimen, and projects on the surface of the liver, where a part of it was covered only with thickened peritoneum.

Hunterian.

2793. A large cyst, from the liver of a Lion, which contained numerous hydatids broken and rolled up. The walls of the cyst are of dense texture and a line thick ; their external

surface is uneven, with portions of lymph adhering to it, and their interior is roughly furred with lymph.

Hunterian.

2794. A portion of the liver of a Pig (?), in which there is a thin globular cyst containing a single hydatid. *Hunterian.*

2795. Portion of a thick cyst, from the liver of a Zebra. Its internal surface is lined with a thick uneven layer of soft, pasty, yellowish substance, in which small acephalocyst hydatids are imbedded. The depressions from which many of the same kind have been detached are also shown.

Presented by the Council of the Zoological Society.

2796. Portion of the liver of some small animal, attached to the surface of which there is a transparent, membranous, globular cyst, containing a hydatid. *Hunterian.*

2797. Another portion, apparently of the same liver, with a similar cyst not opened. *Hunterian.*

2798. Portion of the liver of some small animal, on the surface of which, and partly imbedded in its substance, there are several transparent membranous cysts containing hydatids.

Hunterian.

2799. Portion of the liver of some animal, in which are numerous very thin-walled cysts containing hydatids of various sizes.

Hunterian.

2800. "A portion of a cyst, from a liver studded with hydatids."
—*Hunterian MS. Catalogue.*

2801. The liver of a Sheep, in which are some greatly dilated bile-ducts containing several flukes (*Distomata*) attached to their lining membrane.

Presented by Francis Kiernan, Esq., 1876.

Diseases of the Blood-Vessels.

2802. Section of a liver, in which one of the large branches of the hepatic veins contains two nodulated masses of hard substance, irregular in form, and nearly half an inch in their chief diameter. They were probably formed from clots of blood. They did not adhere to the interior of the vein. The texture of the liver (the blood-vessels of which are partially injected) has an unnatural appearance, resembling in some degree that existing in cirrhosis. A layer of tough false membrane has been reflected from the peritoneal surface.

The patient was a man 60 years old, who had often been tapped for ascites. Towards the close of his life "black jaundice" came on.

From the Museum of George Langstaff, Esq.

2803. Two portions of bone-like substance, flattened, but branching like blood-vessels, from the liver of a Sheep. They were probably formed in obliterated blood-vessels. *Hunterian.*

Other specimens of Diseases of the Liver are:—Nos. 49, 50, 466, 516, 521, and 2339.

Series XXVII. DISEASES OF THE GALL-BLADDER AND BILE-DUCTS.

Effects and Presence of Gall-stones : 2805, 2810 to 2830 B.

Hypertrophy : 2804-5, 2812 to 2818, 2820 to 2822.

Contraction : 2805 to 2807, 2816 to 2819.

Dilatation : 2747 P, 2758, 2804, 2811, 2814, 2825-26, 2830.

Inflammation :—

Acute : 2806.

Chronic : 2804, 2806, 2816, 2821, 2824?

Ulceration : 2822, 2827-28, 2830.

Calcareous changes in Gall-bladder : 2805 to 2808, 2823.

Sacculation of Gall-bladder : 2804.

Obliteration of Ducts : 2804-5, 2833.

Morbid Growths : 2809, 2812.

Cholecystotomy : 2830 A.

Hypertrophy.

2804. Parts of the liver and gall-bladder of an Ox. No cystic duct could be traced; and the gall-bladder was filled with pale fluid, like white of egg, indicating that its duct had been long obstructed, if not obliterated. The coats of the gall-bladder are a quarter of an inch thick, and exhibit, at the part next the liver, several partial dilatations into sacculi, like those which are formed in the urinary bladder in cases of long-continued obstruction of the urethra.

From the Museum of George Langstaff, Esq.

Thickening, Induration, Contraction, and other Effects of Inflammation.

2805. Part of a duodenum, with the gall-bladder and ducts. The gall-bladder is contracted into the form of a nearly cylindrical pouch, half an inch in diameter : its coats are thickened and indurated, and it is full of calculous matter. The cystic duct appears to be obliterated. The hepatic ducts and duodenum are of ordinary size and healthy texture.

Presented by Sir William Blizard.

2806. Part of a liver, with the gall-bladder. The coats of the latter are thickened and calcareous, and contained pus. The peritoneal surface of the gall-bladder has flocculent false membrane upon it.

From a case of typhoid fever, in the fourth or fifth week of which the suppuration is believed to have occurred.

The intestine is preserved, No. 2507.

Presented by Dr. Goodhart, 1875.

2807. A gall-bladder, thickened and contracted, and containing a few fragments of biliary calculi.

2808. A dried gall-bladder of very small size, and having an extensive deposit of earthy matter, like plates of bone, in its coats. It is probable that, previous to this deposit, its coats were diseased like those of the three specimens last described.

Presented by Sir William Blizard.

Morbid Growths.

2809. A gall-bladder, injected and everted to show two small melanotic growths upon its mucous membrane. The glands in the portal fissure are seen to be in an advanced state of melanosis.

Presented by Francis Kiernan, Esq., 1871.

Effects of Calculi.

2810. A gall-bladder, dried, with several biliary calculi adhering to its coats and closely fitted to each other.

From the Museum of Sir A. P. Cooper.

2811. A gall-bladder, the mucous membrane of which has lost nearly all the naturally reticulated arrangement of its surface, and is in some places depressed, as if by the lodgment of calculi. The neck also of the gall-bladder is dilated.

Hunterian.

2812. A gall-bladder, inverted. It had a large calculus in its fundus, through the influence of which its inner surface has lost its reticular structure and appears delicately fasciculated, as if by the development of bundles of muscular fibres beneath it. On some situations, also, fringes of pointed processes, like large villi and papillæ, are raised from the mucous membrane. *Hunterian.*

2813. A gall-bladder, with two large calculi distending it just above the cystic duct. In other parts its walls are thin, though not distended; its inner surface is not reticular, but fasciculated by muscular fibres strongly developed beneath it. The cystic duct is of natural size. *Hunterian.*

2814. A gall-bladder, greatly distended, fasciculated, and having small portions of its smooth mucous membrane depressed in shallow pits between the strongest fasciculi. A large oval calculus of pure white cholestearine is fixed in the lower part of the gall-bladder, just above the commencement of the cystic duct. At the fundus also there is a pouch, like a partial dilatation of its coats, in which, probably, the calculus was contained before it passed into its present position.

From a gentleman, 81 years old. No signs of the presence of the calculus were observed. The gall-bladder was filled with colourless transparent mucus. The patient's urinary bladder and enlarged prostate are preserved in No. 387.

Presented by Sir William Lawrence.

2815. A gall-bladder, dilated, thickened, and indurated, smooth on its internal surface, and containing seven large tuberculated white calculi, one of which, nearly an inch in diameter, is tightly impacted in its cervix, and completely obstructs the passage into the cystic duct.

The patient, a gentleman 60 years old, died with strangulated hernia.

From the Museum of John Heaviside, Esq.

2816. A gall-bladder, with adjacent portions of the liver, duodenum, and other parts. The gall-bladder is nearly filled

by a large white nodulated calculus ; its coats are thickened, contracted, and adherent to all the surrounding organs. A bristle is passed through the cystic and common biliary ducts. There are numerous small black spots, not clearly defined (as those of melanosis usually are), in the liver, the mucous membrane of the duodenum, the pancreas, and other tissues. *Hunterian.*

2817. A gall-bladder, containing a smooth oval calculus formed of white glistening cholestearine, around which its coats are contracted, indurated, and opaque.

From the Museum of John Taunton, Esq.

2818. A similar specimen, in which the contracted gall-bladder is narrow, elongated, and full of smooth white calculi.

The patient had a large calculus in his urinary bladder, and committed suicide.

From the Museum of George Langstaff, Esq.

2819. Part of a liver, with the gall-bladder thickened, and closely contracted upon a nearly spherical calculus, which measures an inch and a quarter in diameter.

Presented by Sir William Blizard.

2820. The gall-bladder of a woman nearly 70 years old. It is thickened, and completely filled with a large and a small calculus. The larger calculus is of a nearly regular oval form, and measures an inch and three quarters and an inch and a half in its two chief diameters.

From the Museum of John Howship, Esq.

2821. A gall-bladder, with the adjacent portions of the liver and duodenum. The gall-bladder is closely contracted around two biliary calculi ; its coats are a line and a half in thickness ; all their tissues are consolidated and indurated, and its outer surface is adherent to the duodenum.

From the Museum of Sir A. P. Cooper.

2822. A gall-bladder, the coats of which are nearly a quarter of an inch thick, and indurated. Its internal surface is coarsely ulcerated and flocculent. It was filled with the collection of calculi of various sizes which lie below it.

The liver of the patient was full of cancerous tumours, and nearly filled the abdomen; and similar tumours were found in the diaphragm, omentum, and pancreas.

From the Museum of George Langstaff, Esq.

2823. A gall-bladder, with the adjacent portion of the liver. The coats of the gall-bladder are from $\frac{1}{4}$ to $\frac{1}{3}$ of an inch in thickness, and hardened by an abundant calcareous deposit; and its interior was filled with a soft, solid substance, containing the colouring-matter of bile and a large quantity of cholestearine.

The patient had no symptoms referable to hepatic derangement; but when the stomach was empty had complained of a sense of oppression and weight at its pyloric extremity, which was relieved upon taking food.

Presented by Edmund Lloyd Bagshaw, Esq.

2824. A gall-bladder, with its ducts. The cystic duct is distended by a calculus to a diameter equal to that of the gall-bladder, of which it thus appears as if it were a part. The fundus of the gall-bladder looks as if the calculus had been lodged in it for some time before it was forced into the cystic duct.

Hunterian.

2825. Portion of liver, with the gall-bladder and ducts. The trunks of the hepatic ducts are dilated by several large brown biliary calculi; a small one of the same kind lies in the cystic duct, and several in the common duct; but there are none in the gall-bladder, though it is dilated. The coats of all the ducts, as well as those of the gall-bladder, are thickened. *From the Museum of John Howship, Esq.*

2826. Part of a duodenum, with the common bile-duct. A large oval calculus is tightly fixed in the extremity of the duct: a portion of it projects into the duodenum through

the dilated orifice of the duct. The whole length of the duct is dilated, and both its coats and those of the gall-bladder are thickened.

The patient was a very large woman, 70 years old. For nearly six months before death she had been subject to spasmodic pains of the stomach, which came on with shivering, like an ague-fit, continued from half an hour to an hour, and were succeeded by unnatural heat. To these were added in the last month of life frequent vomitings and retchings, great thirst, and a deep jaundice-colour of the skin. She was occasionally during this month better than before it; but sometimes the spasms were more severe, and the pain extended over a greater part of the abdomen. Three days before death she was suddenly seized with unusually severe shivering and pain, which extended quite round the abdomen, and, without remission, seemed to grow worse till she died.

The liver was found, after death, pale, soft, and fragile; the gall-bladder containing numerous small angular calculi; both it and all the bile-ducts were distended, and all their coats were greatly thickened. The stomach appeared healthy.

From the Museum of John Howship, Esq.

2827. A gall-bladder, with parts of the liver, duodenum, and stomach. In the duodenum, about an inch and a half from the pylorus, there is a large ulcerated aperture, with thin and flocculent edges, through which a calculus passed from the gall-bladder into the intestine, as shown probably in No. 2436. The gall-bladder is adherent all round the margins of the ulcer: its coats are thickened, indurated, and irregularly contracted. There are dark spots both on the coats of the gall-bladder and on the mucous membrane of the duodenum, as if they had been acted on by the digestive fluid. *From the Museum of John Howship, Esq.*

2828. A gall-bladder and duodenum, with a large aperture leading from the fundus of the bladder into the duodenum, about half an inch from the pylorus, through which a large calculus had passed. Other calculi are still contained in the gall-bladder. The gall-stone had passed, and was in its course down the intestine, when the adhesions between the duodenum and gall-bladder were ruptured during the violent vomiting of the patient. Extravasation into the peritoneal cavity occurred.

From a woman, aged 27. She suffered with symptoms of acute peritonitis, and died in seven days. At the inspection the peritoneal cavity was found to contain bloody serum. The small intestines were extensively distended, from the stomach to within a few inches of the termination of the ileum, while the cæcum and colon were contracted and empty. At the spot where the distension ceased a large biliary calculus was found which entirely filled the canal.

The case is recorded in the 'Transactions of the Pathological Society,' vol. i. p. 255.

Presented by Dr. Peacock, 1876.

2829. The calculus removed from the intestine of the preceding specimen. It is globular, sublobulated, and laminated on the section.

Presented by Dr. Peacock.

2830. Biliary ducts, together with a cyst containing a calculus two thirds of an inch in diameter. The cyst is placed between the cystic and hepatic ducts, adherent to both but not communicating with either. Its walls are about half a line in thickness, tough, uneven, and closely applied upon the calculus, which, it must be supposed, passed by ulceration from the gall-bladder, and had a cyst formed around it among some false membrane. All the bile-ducts are dilated and thin.

Hunterian.

- 2830 A. A portion of a liver, with the gall-bladder, cystic and common ducts, and duodenum. Upon the anterior and lower part of the gall-bladder is an incision, closed by a continuous silk suture, which was made in the operation of cholecystotomy. The common duct appears dilated.

The patient, aged 59, died with suppression of urine forty-eight hours after the operation. At the post-mortem water could not be pressed out from the gall-bladder through the incision, showing that the apposition of the edges was perfect. About 5 or 6 ounces of bile were found in the peritoneal cavity, but there were no signs of peritonitis. The kidneys were small, with firmly adherent capsules, and appeared to be the seat of recent congestion.

*Presented, with the following specimen, by
W. Appleton Meredith, Esq., 1883.*

- 2830 B. Three cylindrical gall-stones, weighing 1 oz. 26 grs., from the preceding case.

Series XXVIII. DISEASES OF THE PANCREAS.

Fatty degeneration: 2831.

Abscess: 2832.

Calculi: 2833-34.

Dilated Ducts: 2833.

Cancer: 2835.

Melanotic Sarcoma: 2836.

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2831. Section of a pancreas, considerably enlarged and almost wholly converted into fat. The fat has the ordinary character of soft human fat; but, in the arrangement of its lobules, resembles the lobules and acini of the pancreas. The pancreatic duct is pervious, and appeared healthy.

From a middle-aged man, who died with typhus fever, and was deemed healthy before he was seized with it.

The other section of the pancreas is in the museum of St. Bartholomew's Hospital.

Presented by Sir James Paget.

2832. A pancreas, with the cavity of a large abscess displayed near its head. A bristle is passed under some bands of adhesion between the gland and the duodenum.

The patient was a laundress, aged 33, who was admitted into the Cleveland-street Asylum, April 12, 1877, complaining of jaundice and gastric disturbance, from which she had been suffering for nine months. When in hospital, she had several rigors, with tenderness over the liver, followed by abdominal pain and death on April 24th. At the autopsy abscesses were found in the liver as well as the abscess in the pancreas. There were no signs of peritonitis or of any disease in the other abdominal viscera. Gangrenous patches were found in both lungs.

Presented by Dr. H. A. Lédard.

2833. A pancreas, with calculi of various sizes in its ducts. The larger ones have been removed, but some remain at the termination of the main duct and in the accessory ducts. The orifices of some of the ducts are blocked and all

are dilated. The calculi are composed of carbonates and phosphates of calcium, magnesium, and sodium, with organic matter.

The cystic duct was obliterated, the gall-bladder being of normal size. The hepatic and common bile-ducts were patent, and the smaller branches of the hepatic duct were occupied by many microscopic calculi. From a dissecting-room subject. The case is recorded in the 'Transactions of the Pathological Society of London,' vol. xxiv. p. 136.

Presented by Dr. Curnow, 1872.

2834. Some of the larger calculi from the preceding specimen ; others are placed in the Series of Calculi.

Presented by Dr. Curnow, 1872.

2835. Section of a pancreas, in the middle of which is a large oval mass of hard cancer. Scarcely any trace of the pancreas can be discerned around the tumour. The head, or right end of the pancreas appears healthy ; but the left end is very small, atrophied, and apparently in a state of fatty degeneration like No. 2831.

Presented by Sir James Paget.

2836. Section of a pancreas, in which there are numerous melanotic growths of various sizes and shapes. The texture of the gland around and between the growths appears healthy.

The specimen was taken from a girl, 20 years old, whose eye, containing a melanotic growth, was removed three years before her death. There were great masses of melanosis in her liver, and melanotic deposits in the skull, skin, and many other parts. The other section of the pancreas, the melanotic eye, and some other parts are preserved in the museum of St. Bartholomew's Hospital. The case is related by Mr. Lawrence in the 'London Medical Gazette,' vol. xxxvi. p. 951 (London, 1845).

Presented by Sir William Lawrence.

Series XXIX. DISEASES OF THE LACTEAL AND LYMPHATIC VESSELS AND GLANDS.

Hypertrophy, Lymphoma : 2837, 2838, 2857 ?

Inflammation : 2844.

Tubercle : 2839 to 2845, 2848 to 2851.

Calcareous changes : 2846-47, 2852 to 2856.

Distension of Lacteals by Caseous material : 2841-42.

Morbid Growths : 2857 to 2862.

Lympho-Sarcoma : 2857 A to 2860.

Secondary Cancer : 2861.

Secondary Melanotic Disease : 2862.

Enlargement.

2837. The mesentery of a child, with enlarged lymphatic glands.
The blood-vessels are minutely injected.

From the Museum of Sir A. P. Cooper.

2838. Half of a large lymphoma from the side of the neck, apparently consisting of a mass of much enlarged and conglomerate lymphatic glands. The section is smooth, of a pale yellowish colour, and marbled by the outlines of the imperfectly coalescent glands ; its surface is nodulated, surrounded by a capsule and adherent to the skin, which, at one point, has sloughed and exposed the breaking-down tissue of the tumour.

Removed from a man, aged 68. It occupied the left side of the face, and resembled a fatty tumour, being very irregular on the surface. "The growth was first noticed twenty-five years ago as a small kernel behind the ear. It has never given him any pain or inconvenience, except from its bulk, until the last six months, since which time it has bled on two or three occasions from an ulcerated spot."

Presented by Alfred Mathias, Esq., 1864.

Tubercle, with Caseation and Calcareous Degeneration.

2839. A group of about ten lymphatic glands, of spheroid and ovoid form, removed from the upper part of the left side of the neck of a girl, sixteen years of age. On section, they appear to be composed of a homogeneous soft substance, of a pale cream-colour, intersected by a few fibrous bands and enveloped in a delicate fibrous vascular capsule. The glands are enlarged by the infiltration of their tissues with tuberculous caseous material.

The tumours had been observed growing for two years. After the operation for their removal, the patient recovered rapidly.

Presented by John Hilton, Esq.

2840. Two enlarged lymphatic glands, from a large white Monkey that died tuberculous. *Hunterian.*

2841. Portions of small intestine and mesentery. The mesenteric glands are greatly enlarged, and the lacteal vessels on their surfaces, and passing from them to the intestine, are distended with an opaque white substance like chyle. Many of the vessels thus distended are traced into the coats of the intestine. *From the Museum of Sir A. P. Cooper.*

2842. Portion of small intestine, with tuberculous ulcers of its mucous membrane, and some of its large lacteals full of opaque white tuberculous matter. The mesenteric glands were also diseased. *Hunterian.*

2843. Portions of the small intestine and mesentery of a child. The mesenteric glands are filled and greatly enlarged, with deposits of firm tuberculous matter.

From the Museum of Sir A. P. Cooper.

2844. Subcutaneous lymphatic glands, which are described in the Hunterian MS. Catalogue as having gone through the

processes of inflammation, suppuration and ulceration, without being destroyed. They were taken from a Negro, and it will be observed that in the cicatrix over the diseased glands the black pigment of the epidermis has been reproduced.

Hunterian.

2845. Sections of three lymphatic glands, removed, together with the thickened and indurated tissue around them, from over the lower part of a man's parotid gland. The deepest of the three glands had a curd-like fluid in its centre.

Hunterian.

2846. A trachea with some bronchial glands adherent to its bifurcation, enlarged and full of earthy and black matter.

From the Museum of Sir A. P. Cooper.

2847. A similar specimen.

From the Museum of George Langstaff, Esq.

2848. The larynx, trachea, and adjacent parts, showing a large mass of bronchial glands in a state of caseation and softening. The right pneumogastric nerve is so firmly adherent to the glands that it was impossible to isolate it by dissection. The left nerve was quite free.

From a boy 8 years old. His illness commenced rather more than a fortnight before his admission to hospital. He had a hacking cough which gradually increased in severity, and became paroxysmal, with fits of extreme dyspnœa resembling spasmodic asthma. Tracheotomy was performed but gave no relief, and he died with double pleurisy, broncho-pneumonia, high temperature, and coma.

Presented by Dr. Goodhart, 1875.

2849. The larynx and trachea of a child, with the mediastinal glands enlarged and caseous. One of them has ulcerated into the trachea above the bifurcation.

From a child 2 years old. It had been under treatment for a short time for laryngeal dyspnœa of a paroxysmal character, called "fits" by the mother. It was well nourished and healthy-

looking, and there were no physical signs indicative of disease, although the symptoms led to the supposition of some enlargement of the mediastinal glands. The child was suddenly seized with one of her attacks in the middle of the night, and died almost immediately.—*MS. Notes*, vol. iii. p. 24.

Presented by Dr. Goodhart, 1877.

2850. A child's lung, with numerous enlarged and caseous bronchial glands near the hilum. A section of the lung shows that it is consolidated and infiltrated by numerous rounded nodules of caseous matter ; and at its base is a diffused mass of the same material. Its upper two-thirds are studded with numerous small cavities, and near its middle is a large cavity about half an inch in length. The pleura is much thickened and its surfaces are adherent.

Presented by Dr. W. H. Day, 1880.

2851. The tongue, larynx, trachea, and larger bronchi, with the bronchial and cervical lymphatic glands, of a boy who died with phthisis. All the glands are enlarged, and many of them contain tuberculous matter. The bronchi are compressed and flattened by the glands around them.

From the Museum of George Langstaff, Esq.

2852. Portions of lymphatic glands adhering to the exterior of a large artery, and having earthy matter abundantly deposited in them.

Hunterian.

2853. A portion of large intestine, to which is attached a large irregular mass of earthy matter formed, probably, in diseased mesenteric glands.

Presented by the Trustees of the British Museum.

2854. The dried half of an oval calcareous tumour, measuring three inches in its chief diameter. Its section is uniform, but the calcareous matter appears to have been deposited in lines or fibres radiating towards the circumference of the tumour.

It is surrounded by a capsule of fibrous tissue, and consists, according to an analysis made in King's College Laboratory, of 95.36 parts of combustible organic matter, and 4.64 parts of earthy phosphates.

It was removed from the neck of a girl, and its formation may have been due to the calcification of a tuberculous lymphatic gland.

Presented by W. Watson Beever, Esq., 1864.

2855. An oval tumour, four inches in diameter, composed of calcareous matter, with some undulating fibrous bands. At one part, where the section of the tumour is broken, it is seen to be composed of coarse fibres. The surface is covered by the skin, and is surrounded by a thick capsule of fibrous tissue.

Removed from the neck of a female, aged 40. Three months before the operation, an abscess burst over the tumour, from which a piece of calcareous matter was discharged. The tumour was situated below the ear, and extended downwards towards the hyoid bone. There was an ulcer of the skin over it an inch in diameter and in its centre was a cavity. The patient gave no satisfactory account of its formation. (See MS. Notes, vol. i. p. 53.)

Presented by Edward Cook, Esq., 1866.

2856. The dried calcareous capsule of a tuberculous lymphatic gland.

Presented by Dr. J. G. Garson, 1881.

Morbid Growths.

2857. A very large tumour, weighing nine and a half pounds. Its surface is in parts lobulated, and its section is of a white or yellowish-white colour, firm, tolerably uniform except for an indistinct lobulation suggesting the appearances produced by the agglomeration of diseased lymphatic glands. At the upper part of the section is a cavity with irregular walls, and having other appearances indicative of the breaking-down of the morbid growth. Near the cavity a small rod or trabecula of calcareous matter is cut across.

Sections of the tumour, examined with the microscope in 1884,

showed that it was largely composed of hyaline, or indistinctly fibrillar, bands and trabeculæ of connective tissue which, by anastomosing, formed an approach to a network with irregular spaces of elongated form. The spaces contained small round cells like lymph-corpuscles, and in a few of them a reticulum composed of branching cells could be made out. These cells only differed from those of adenoid tissue in the greater coarseness of their processes. Lymph-like cells lay in the meshes. No appearances of tubercle were found. The general characters, situation, and minute structure of the tumour best accord with the supposition that it was a lymphoma.

It was removed from the side of the neck of an officer in the Indian Army, aged 40. Thirteen years before the operation, a swelling appeared about the middle of the neck behind the sterno-mastoid muscle. Its growth was painless. The sterno-mastoid passed over the tumour, which descended within an inch of the clavicle. The patient died from the shock of the operation. (See MS. Notes, vol. i. p. 222.)

Presented by Sir William Fergusson, 1869.

- 2857 A. The arch of an aorta and its large branches imbedded in a soft pale homogeneous mass of lympho-sarcoma, originating in the mediastinal lymphatic glands. The morbid growth is firmly adherent to the coats of the vessels, which, especially the left carotid, appear slightly compressed. It has also invaded the tissue of the lung.

Presented by Dr. H. A. Lediard, 1880.

2858. Lymphatic glands, from an anterior mediastinum, enlarged, indurated, and forming a great irregular mass, which surrounds the lower part of the arch of the aorta, and covers the front and sides of the trachea and large bronchi. Sections of some of them, about the bifurcation of the trachea, exhibit small masses of dense white fibrous substance, like hard cancer, which are imbedded in the blackened substance of the glands. Other glands appear uniformly hardened. The bronchi are compressed; the aorta retains its natural size.

From the Museum of George Langstaff, Esq.

- 2858 A. The heart, trachea, and contents of the left thoracic cavity, with a large mass of lympho-sarcoma occupying the upper part of that cavity and the mediastinum. The growth

projects prominently forwards in the situation of the left second intercostal space, and passes upwards beneath the clavicle, filling the left supra-scapular fossa. The upper lobe of the lung is adherent to it, and the vessels and nerves in the left side of the chest and root of the neck are completely imbedded in the tumour. The left bronchus and left side of the lower part of the trachea are flattened-out. The left phrenic and pneumogastric nerves are much thickened where they pass through the tumour. The heart is pushed down and the pericardium is not infiltrated; but there are several small nodules on the surface of the heart. The left cervical glands are involved in the disease.

The tumour was proved, microscopically, to be a small round-celled or lympho-sarcoma, and the thickening of the pneumogastric nerve was due to infiltration of the nerve by the growth.

From a lad aged 15, who, two months and a half before death, complained of cough, and pain in the left arm. Subsequently a swelling appeared on the front of the chest, with dyspnoea, ringing cough, dysphagia, and the physical signs of intra-thoracic tumour. He became comatose, and died after a paroxysm of dyspnoea. There were secondary deposits in the kidneys as well as in the heart. (See Trans. Path. Soc. vol. xxxiv. 1883.)

Presented by Dr. Samuel West, 1883.

2859. An irregularly lobulated mass removed, after death, from the right side of the neck. On the right hand of the specimen are shown part of the thyroid cartilage, the right lobe of the thyroid body with the great vessels of the same side, and a large lobulated mass pushing forward and surrounding them. Part of the oesophagus is shown behind. The new growth is ragged on its posterior surface, where it was attached to the cervical vertebræ. At the lower part, the pneumogastric and right recurrent laryngeal nerves can be seen emerging from the growth, and the latter winds round the subclavian artery, and passes thence towards the right side of the trachea. The growth is probably a lympho-sarcoma.

Presented by John Gay, Esq., 1874.

2860. A mass of mediastinal lymphatic glands, affected with lympho-sarcoma, and compressing the parts adjacent to them. The enlarged glands are united into a mass six inches

in diameter. Sections through them at various parts show that their natural texture is completely displaced by the morbid substance, while the interspaces between some of them, as well as some of the glands themselves, are coloured with black matter. The parts chiefly compressed by the diseased mass are the œsophagus and the lower part of the trachea : these are widely separated from each other, and the disease has protruded into both of them through large ulcers of their walls. The arch of the aorta and the left vena innominata are also imbedded in the surface of the mass ; the left bronchus and left pulmonary vessels are surrounded by it, and the canals of all are narrowed.

The patient was 34 years old. The disease had been observed for twelve months ; its chief symptoms were palpitation of the heart and extreme dyspnœa, with frequent threatenings of suffocation.

From the Museum of George Langstaff, Esq.

2861. Lymphatic glands, from a man who died after the removal of a medullary testicle. The glands form one mass, extending from below the renal arteries, by the sides of the aorta to its arch. The part of the mass which was within the abdomen is six inches in width ; that in the posterior mediastinum about half as wide. A portion of intestine is adherent to the front of the part from the abdomen, and the vena cava inferior is imbedded in it.

Presented by George J. Guthrie, Esq.

2862. A mass of lymphatic glands much enlarged and of a uniform dark brown colour from infiltration with a melanotic growth. They are not adherent.

Presented by Francis Kiernan, Esq., 1871.

Series XXX. INJURIES AND DISEASES OF THE SPLEEN.

Injuries:—

Rupture : 2863 to 2865.

Cicatrized : 2865.

Hypertrophy : 2866 to 2868.

Lardaceous Degeneration : 2869, 2870 A, 2893 A.

Inflammation :—

Capsulitis : 2871 to 2875.

Abscess : 2876.

Tubercle : 2877 to 2885.

Morbid Growths:—

Cysts : 2887–88.

Tumours : 2886, 2889.

Lymphadenoma : 2886.

Parasites : 2887 P, 2890 to 2893.

Embolism or Infarction : 2893 A.

Injuries of the Spleen.

2863. A spleen, ruptured across the whole of its outer surface and deeply into its substance.

The patient, a man 50 years old, was kicked by a horse on the left side of the chest, sixty-four hours before death. All the ribs of that side were broken, except the first two and the twelfth, and some of them were driven through the pleura and lacerated the lung. The diaphragm also was lacerated, but not torn through. The abdomen contained a considerable quantity of blood.

Presented by Joseph Swan, Esq.

2864. "The spleen of a man who received a hurt, who became faintish, and low, and died. Upon opening the belly there was found a great deal of extravasated blood, and on searching for the wounded vessel we found the spleen broke."—*Hunterian MS. Catalogue.*

2865. Portion of the spleen of a Horse, which had been ruptured, several years before death, by a violent blow from the shaft of a cab. In the margin of the organ is a rent, about two inches in depth, the edges of which are greatly retracted and completely cicatrized.

Presented by Dr. Edwards Crisp.

Hypertrophy.

2866. A spleen, measuring eleven inches in length, six in breadth, and four in thickness. It was removed from a gentleman, of whose case Mr. Hunter has left the following account.

"Sir Patrick Crawford, about six months before his death, observed a fullness or hardness in his left side, which increased to a considerable size. From every circumstance of situation and direction, it appeared to be the spleen. He took great quantities of medicines for it, especially the cicuta, but to no effect. Although never a lusty man, yet he lost flesh very considerably, becoming extremely thin, while at the same time his appetite was good, and perhaps indulged himself too much both in eating and drinking.

"I was consulted to say what this swelling was.

"The swelling was oblong, situated obliquely in the left side, one end downwards and forwards, the other the reverse. As he was very thin, it was easily felt; its outer edge or boundaries could be traced almost all round, viz., its under or posterior edge, lower anterior end, and upper edge. It was about six inches broad, with its lower end below the navel, and on the right of the linea alba: from thence, passing upwards to under the lower edge of the thorax, where it could not be followed by the hand. Its anterior edge at the upper part was nearly as far forwards and upwards as to be within an inch of the left xyphoid cartilage, which appeared then to me to be too far forwards and upwards for the spleen; there it became a little obscure to the feel, independent of its going under the cartilages of the ribs, which I then could not account for (considering it as spleen), and which was explained when the body was opened.

"The lower end was evidently loose, for it could be shoved upwards and downwards, and when erect it became lower than when in an horizontal position.

"Why should the spleen, by being simply enlarged in size, without any apparent diseased texture, produce such an atrophy?"—*Hunterian MS.: Cases in Surgery*, p. 746.

"The Appearances upon opening the Body of Sir Patrick Crawford.

"On opening the belly the first thing that appeared was the spleen. It occupied almost the whole of the left side of that cavity, and which was the solid mass that was so plainly felt before death. It was of a natural colour and consistence to the feel, but was increased about twelve times its natural size, having a few adhesions to the side of the belly near the upper part.

"Its lower end passed over the colon, and lay loose among the small intestines. Its upper end lay upon the great arch of the stomach, pressing it towards the middle of the body; and this part was covered by the left lobe of the liver, which gave the obscurity here to the feel, before death. We found a small quantity of water in the cavity of the belly. There was a stone in the gall-bladder, but the liver appeared sound. The kidneys could not be said to be perfectly sound, although not much diseased, being rather flaccid in their substance.

"The stomach and whole intestines were perfectly sound to appearance, and no worms were to be found in any of them.

"The contents of the chest, viz., the heart and lungs, were perfectly sound.

"On examining the cavity of the abscess, which appeared on the upper part of the calf of the leg, a few days before death, and which had been opened, and proved to contain a large quantity of bloody pus, it appeared to be most probable that a small artery had burst close to the great artery of the thigh as it passed into the leg; for this principal artery was almost laid bare for some way, and the blood had worked its way down the leg superficially, where it was opened. This last complaint, if he had lived a few days longer, would, very probably, have led to a series of mischiefs; most probably the large artery must have been taken up to prevent the future bleeding, and which, probably, would have led to amputation, all of which he could not have borne."—*Hunterian MS.: Dissections of Morbid Bodies*, p. 213, No. 188.

In the examination a small detached tumour, not noticed in this description, was found loose in the cavity of the belly. It is preserved in No. 2365.

The specimen is represented in Baillie's '*Morbid Anatomy*,' fasc. vi. pl. 3.

2867. An hypertrophied spleen, weighing eight ounces, from a child two years and three months old.

For seven months the child had suffered from wasting of the limbs, difficult dentition, and a perfectly anæmic condition of the whole body, more particularly induced by hæmorrhage from the nostrils, which occurred three times, the last to such an extent as to destroy life. Throughout the illness the intestines poured forth fœtid, dark, grumous secretions. The appetite was at times

enormous, but the food never appeared properly digested. Three months before death the abdomen became distended, evidently from enlargement of both liver and spleen. It was remarked that, during the attacks of epistaxis, the abdomen rapidly diminished in size.

Further particulars of the case will be found in Dr. Crisp's 'Treatise on the Structure and Use of the Spleen,' 1855, p. 155.

Presented by Dr. Edwards Crisp.

2868. The hypertrophied spleen of a domestic Pea-fowl. The bird was very fat. The spleen weighed three ounces five drachms. The liver was also greatly enlarged. The healthy spleens of two birds of the same species weighed eighteen and twenty-three grains respectively.

Presented by Dr. Edwards Crisp.

Lardaceous Degeneration.

2869. A portion of a spleen affected with lardaceous disease. It is enlarged, and its section looks dense and close-textured. It still presents some of the appearance of semitransparency and swelling of the Malpighian corpuscles characteristic of the so-called "Sago" spleen.

From a woman aged 43, the subject of congenital ichthyosis. She died of chronic phthisis. The liver, kidney, and intestines were also lardaceous.

Presented by Dr. Goodhart, 1873.

2870. A spleen enlarged by lardaceous disease. Its section presents the appearances described in the last specimen.

Presented by Charles Stewart, Esq., 1881.

- 2870 A. A section of a similarly diseased spleen which has been stained with anilin violet. The dye has stained deeply the enlarged Malpighian bodies, which, with the arterioles, are the chief seat of the degeneration.

Presented by Frederic S. Eve, Esq., 1884.

Thickening of, and Osseous Deposits in, the Capsule, and Abscess.

2871. A spleen, the capsule of which is generally thickened, and, in nearly every part, thickly beset with plates and nodules of a substance like cartilage.

Presented by George Chandler, Esq.

2872. A portion of a spleen with thickening of its fibrous capsule. The new material is composed of embryonic fibrous tissue, glistening and homogeneous, with elongated nuclear masses imbedded in it. This condition is met with in syphilis, chronic alcoholism, and chronic peritonitis.

Presented by Francis Kiernan, Esq., 1871.

2873. Sections of an injected spleen, the capsule of which is irregularly thickened, measuring, in different parts, from a line to an inch and a quarter in thickness, and composed of a tough, hard, and compact tissue like fibro-cartilage. A small portion remains healthy. The spleen itself also appears healthy. *From the Museum of Sir A. P. Cooper.*

2874. The capsule of a spleen, a part of which is greatly thickened and converted into a substance like fibro-cartilage, with calcareous matter deposited in it.

From the Museum of Sir A. P. Cooper.

2875. A portion of the capsule of a spleen, dried, with a thin plate of calcareous substance in it. *Hunterian.*

2876. Portion of spleen, showing parts of the uneven ragged boundaries of two collections of pus in it. Its capsule is, in one part, nearly a quarter of an inch thick and very hard. *Hunterian.*

Tubercle.

2877. Portion of a spleen, in which very minute, round, pale and yellowish tubercles are thickly scattered. *Hunterian.*

2878. A spleen, in which small oval and round masses of tuberculous matter, from half a line to a line in diameter, are very thickly scattered. The intervening substance, the blood-vessels of which have been injected, appears healthy.

From a child, 10 years old, which had been ill for about two months with signs of disordered digestive organs and of intermittent fever. Tubercles were found in the liver.

From the Museum of George Langstaff, Esq.

2879. Spleen of a child, with numerous tubercles scattered through its substance and over its surface.

From a child, aged 10 months, who died of tuberculosis of the lungs, liver, kidneys, and mesenteric glands.

Presented by Dr. Goodhart, 1876.

2880. Section of a spleen, enlarged, and full of similar tubercles.

From a child, 2 years old, in which the only sign of disease was diarrhœa, and in which this is said to have been the only morbid change.

From the Museum of John Taunton, Esq.

2881. The spleen and a portion of the liver of a Common Crane. Both are enlarged, and filled with nodular deposits of tuberculous matter.

Presented by Dr. Edwards Crisp.

2882. The spleen of a Spurred Plover, in which are deposited numerous roundish masses of yellow tuberculous matter, about the size of millet-seeds. There were tubercles also in the lungs and liver.

Presented by Dr. Edwards Crisp.

2883. The spleen of a Guinea-fowl, in a similar condition.

Presented by Dr. Edwards Crisp.

2884. The gizzard and spleen of a Guan, injected. The latter contains numerous small yellow tubercles.

Presented by Dr. Edwards Crisp.

2885. The spleens of two hens, filled with tubercular deposits.

Presented by Dr. Edwards Crisp.

Morbid Growths and Cysts.

2886. A spleen in which are numerous yellow masses which have been partially dissected-out from the splenic tissue. They are now entirely calcareous, but it is probable that they were originally formed of lymphoid tissue, and that, as situated, they constituted the so-called "hardbake" spleen found in Hodgkin's disease or leukæmia lymphatica.

Presented by Francis Kiernan, Esq., 1871.

2887. A spleen, at one end of which, and partly imbedded in its substance, there is a globular cyst, such as may have contained hydatids, about three inches in diameter, with walls from half a line to two lines thick, and formed of a tough pale tissue in parts of which there are plates of earthy matter. The interior of the cyst is nearly smooth; a portion of liver is adherent to its external surface. The spleen is of natural size, but appears to have been of soft texture.

From the Museum of Joshua Brookes, Esq.

2888. Portion of spleen (from an Ox?), on the surface of which is a small, thin-walled, transparent cyst. *Hunterian.*

2889. A spleen, of which the capsule is uniformly thickened, and at one side of which there is a deep irregular loss of substance, from what was considered to be cancerous ulceration.

From the Museum of John Heaviside, Esq.

Parasitic Diseases.

2890. The spleen of the man whose case is described at p. 98, and from whose abdominal cavity several large hydatid cysts were taken. (See Nos. 2368-2370.) On its surface, and partly imbedded in it, are several thick-walled cysts of tough texture, which contained acephalocyst hydatids. The largest cyst has been emptied; its internal surface is uneven and has flakes of yellowish lymph deposited on it. In

another cyst near it, and thickly lined with lymph, there is a mass, composed of rolled-up membranes of collapsed hydatids ; and in another (at the back of the preparation) similarly rolled-up membranes have a deep amber colour. In a fourth are several hydatids, presenting their ordinary appearance. *Hunterian.*

2891. One of the amber-coloured hydatid-membranes, from the preceding specimen, inverted, to show its inner surface thickly studded with minute cyst-like bodies of the same colour. *Hunterian.*

2892. Acephalocyst hydatids, from one of the cysts on the spleen last described. One of them is inverted, and its inner surface is beset with minute white bodies, probably groups of echinococci. *Hunterian.*

2892 A. The calcified wall of a hydatid cyst from the spleen.
Presented by Frederic S. Eve, Esq., 1882.

2893. The spleen of a Lamb, containing a hydatid cyst of the size of a large orange. The walls of the cyst are well seen in the preparation. Several smaller cysts are situated between its external surface and the cavity which it has formed in the spleen ; but not any within the cyst itself.

Infarctus.

2893 A. One half of an enlarged spleen ; it is affected with amyloid degeneration, and upon its surface are three infarcts. The section shows the appearances characteristic of lardaceous or amyloid degeneration which are described in No. 2869. Beneath the convex surface are three cubical or broadly wedge-shaped, circumscribed fibrinous masses of pale colour. That portion of the surface of the spleen beneath which they lie is indrawn and puckered.

Presented by Charles Stewart, Esq., 1881.

Other Specimens of Disease of the Spleen are :--Nos. 19 and 576.

Series XXXI. DISEASES OF THE THYROID
GLAND.

- Hypertrophy (Bronchocele, Adenoma, and Cysto-Adenoma) : 2894 to 2906.
 Congenital : 2896, 2897.
 Calcareous Degeneration : 2903.
 Cystic Degeneration : 2895, 2904, 2905.
Cancer and other Tumours : 2907, 2908. (See also Hypertrophy.)
Enlargement of Thyroid Vessels : 2899, 2906.
Pressure by Enlargement on Surrounding Viscera :—
 On Œsophagus : 2896, 2899 to 2901.
 On Trachea : 2908.
 Cancer extending into Trachea : 2907.
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2894. A bronchocele, consisting, apparently, in a simple increase of the thyroid gland to about twice its natural size. The right lobe is more enlarged than the left. The trachea is not affected.

From a girl, $6\frac{1}{2}$ years old, in whom the disease was first observed about eight months before she died of hydrocephalus. The tumour had been much larger than it was at the time of death.

Presented by John G. Perry, Esq.

2895. A bronchocele, rather larger than No. 2894. The sections show that it has an unusual amount of intralobular fibrous stroma and numerous cysts. The right lobe is considerably more enlarged than the left.

Portions, examined with the microscope, showed rounded alveoli filled with a homogeneous colloid material.

Presented by R. R. Robinson, Esq.

2896. A thyroid body with the adjacent structures, which is the subject of congenital hypertrophy. Both lobes and the isthmus are affected so as to surround the trachea and

œsophagus. The hypertrophied tissue resembles that of the normal gland.

From a boy who died with cyanosis five days after birth. The right ventricle of the heart was hypertrophied, and the ductus arteriosus was patent. The thyroid gland weighed $1\frac{1}{4}$ oz., and produced a very obvious tumour during life.

Presented by Dr. Thurnam, 1871.

2897. A bronchocele, from a young person. The thyroid gland is enlarged to about twice its ordinary size, and more in the right lobe than in the left. Sections of it show that its substance is more than naturally divided into lobes by thin, pale, fibrous partitions; and that its structure is in many places consolidated, while in others it retains nearly a natural appearance. The change of structure, like the enlargement, is greater on the right than on the left side.

From the Museum of Sir A. P. Cooper.

2898. The lower part of the cervical region and the upper part of the thorax of a Dog, with an ovoid enlargement of the thyroid gland.

Presented by Dr. Hott, 1876.

2899. An enlarged thyroid gland, with the adjacent organs. The whole of the gland is enlarged, but the right lobe much more than the left; it has extended round the trachea and œsophagus, passing backwards between the latter and the carotid arteries till its lobes very nearly meet. Its surface is uneven, marked by deep impressions, in which some of the muscles of the hyoid bone lay. The superior thyroid arteries are very large, and on the right side the inferior thyroid artery is twice as large as usual: the left inferior thyroid is not shown.

Hunterian.

A cast of the head and neck of this patient is preserved.

2900. A thyroid gland, enlarged, so as to form a mass of nearly spheroidal shape, six inches in diameter and five inches in depth, which almost surrounds and conceals the larynx,

trachea, and œsophagus. The enlarged gland is deeply lobed on its surface and firm. On the surfaces of its sections some of its natural structure is still apparent: but, for the most part, its cells are enlarged; some of them are filled with yellow transparent jelly-like substance; a few are empty; and many of the largest contain a solid white substance, either opaque and soft, or transparent and firm like cartilage. The œsophagus, trachea, and other adjacent parts are compressed.

From the Museum of Sir A. P. Cooper.

2901. A thyroid gland with some of the adjacent parts. The right lobe of the gland is converted into a hard spheroidal mass, about five inches in diameter and three and a half in depth, which in its growth has pressed the trachea and œsophagus inwards, and the carotid artery and jugular vein far outwards, and has expanded the sterno-cleido-mastoid muscle in a thin pale layer upon its outer surface. It is composed of solid substances of various appearance and consistence, some resembling cartilage, others like firm tuberculous matter, irregularly mingled together; and it is invested by a thin layer of fibro-cellular tissue. The left lobe is smaller than is natural.

The specimen was taken from a lady 81 years old. She first noticed a slight enlargement of the right lobe of the gland when she was twenty-five years old. It increased gradually, and in the last twenty years of her life was painful, sometimes acutely so. The right carotid artery, during life, felt as if it were three times as large as is natural, and used to pulsate very violently, while the pulsation of the left was hardly discernible externally. During the same period the patient suffered from increasing difficulty of swallowing, headaches and giddiness, occasional paroxysms of convulsive cough, and various dyspeptic symptoms. Three months before her death she had partial paralysis of the left leg and left hand; but from this she recovered.

From the Museum of John Howship, Esq.

2902. The left half of a very large bronchocele, with the common carotid artery and a small part of the larynx and trachea. The enlarged left lobe of the thyroid gland measures

between four and five inches in each direction ; its form is irregular, and its surface superficially lobed : it is composed of a very firm, lobular, and compact substance, in some parts uniform, in others obscurely fibrous. The carotid artery and internal jugular vein are imbedded in deep grooves upon its anterior part. The superior thyroid artery is enlarged to nearly twice its ordinary size.

From the Museum of John Howship, Esq.

2903. Part of an enlarged thyroid gland, with some of the adjacent organs. The enlargement is produced by a firm, lobular, and obscurely fibrous substance, which occupies the place of nearly all the natural structure of the gland, and in the interior of which there are plates and small masses of bone-like substance.

From the Museum of George Langstaff, Esq.

2904. A thyroid gland, the right lobe of which is converted into a globular cyst, about three inches in diameter, with thick laminated walls. The interior of the cyst appears imperfectly divided by fibrous septa, and the cavities are filled with a brownish, soft, flaky substance, like coagulated fibrin and blood.

A seton, introduced through the cyst by the surgeon in attendance, caused diffuse inflammation resulting in the death of the patient.

Presented by T. Blizard Curling, Esq.

2905. Part of the right lobe of a thyroid gland converted into a cyst between four and five inches in diameter. The walls of the cyst are about three lines in thickness, and appear to be composed of the expanded substance of the organ: its internal surface is uneven, deeply seamed and wrinkled, and in many parts covered with adherent flocculent lymph and coagulated blood. The cyst is invested with a tough fibro-cellular capsule, and large branches of the superior thyroid arteries are shown ramifying on its surface.

The cyst was full of coagulated blood, and looked like the sac of an aneurism. During life it was punctured, in consequence of

the dyspnœa produced by its pressure on the trachea; a considerable quantity of fluid blood flowed from the wound, and the bleeding continued till the patient died.

From the Museum of George Langstaff, Esq.

2906. A larynx and trachea, with a diseased thyroid gland. The gland is greatly enlarged, and is composed of several distinct lobes of round and oval forms, from one to four inches in diameter, and of which some are connected only by their respective investments of fibro-cellular tissue. The cut surfaces of these lobes show, in every case, more or less of the original structure of the gland; but, for the most part, they are filled with a soft, yellowish, and slightly vascular substance; and in some there are empty cavities. Such a cavity in the largest of the lobes is two inches in diameter, and is surrounded by thick concentric laminæ of firm pale substance like cartilage, around which is a thin layer of the diseased texture of the gland. One of the superior thyroid arteries is much larger than is usual.

From the Museum of Sir A. P. Cooper.

Cancer.

2907. Section of a thyroid gland and of a larynx and trachea, with some of the adjacent parts. The thyroid gland is greatly enlarged by medullary cancerous disease. It surrounds the trachea, and either it or diseased lymphatic glands not distinguishable from it extend downwards to the arch of the aorta, and surround the innominate and right carotid arteries. The trachea is, at one part, extensively ulcerated, and the morbid substance, with a slightly elevated and shreddy surface, protrudes into its cavity.

Hunterian.

2908. A thyroid gland, with some of the adjacent parts. The natural substance of the thyroid gland cannot be discerned; its place is occupied by a mass of soft, flocculent, medullary substance, which completely surrounds the trachea, and measures about six inches from side to side and four inches

from above downwards. The mass is of an irregularly lobed form, with deep indentations on its surface, in which lay the muscles and other parts that were stretched over it. The trachea, at its upper part, is diminished to half its natural calibre by the pressure of the growth around it, and the larynx is pushed aside. The left carotid artery is pushed outwards, and imbedded in a deep groove at the back of the diseased mass. Enlarged and diseased lymphatic glands are attached to the bifurcation of the trachea.

From the Museum of John Howship, Esq.

Other Specimens of Disease of the Thyroid Gland are :—Nos. 15, 269, and 2310.

Series XXXII. DISEASES OF THE PERICARDIUM, HEART AND VALVES.

Diseases of the Pericardium : 2909 to 2932.

Diseases of the Substance of the Heart : 2933 to 2972.

Diseases of the Valves of the Heart : 2973 to 3048.

Subseries 1. DISEASES OF THE PERICARDIUM.

Hypertrophy and Thickening (milk-patches) : 2909, 2958, 3014.

Excess of Fat : 2910-11.

Inflammation :—

Acute : 2912 to 2920, 2923, 2971, 3017.

Chronic : 2915, 2923.

Adhesions and Adherent Pericardium : 2921 to 2924, 2926-27, 2929, 2949, 2953, 2956-57, 2990, 2995, 2998, 3007, 3011.

Calcareous deposits : 2925 to 2929, 2995.

Organization of Adhesions : 2916, 2920.

Vascularization of Adhesions : 2916.

Abscess opening into Pericardium : 2917.

Tubercle : 2930.

Morbid Growths :—

Cancer : 2931 ?

Lympho-sarcoma : 2932.

Hypertrophy, Thickening, and Excess of Fat.

2909. A heart with thick white patches on the visceral layer of the pericardium, more particularly over the right ventricle.

This condition, called by some the "soldier's patch," from its frequency amongst men in the army, is generally the result of friction and is found in greatest extent in enlarged hearts over the anterior surface of the right ventricle and on the ridges in the course of the main coronary vessels.

From a man aged 48, with lateral curvature of the spine, who died of phthisis.

Presented by Dr. Goodhart.

2910. A portion of the left ventricle of a woman's heart. The muscular substance is thin and pale, and is covered with a layer of fat varying in thickness from three to six lines.

Hunterian.

2911. The heart of a Sheep, greatly enlarged by the growth of fat on its exterior and in its cavities. The muscular walls of the auricles and ventricles are very thin. The cavity of the right ventricle is nearly filled by a lobulated mass of suet-like fat, which has distended its walls, and has pressed back the tricuspid valve, so as nearly to close the orifice into the auricle. The lining membrane of the ventricle and the pulmonary artery are healthy. The cavity of the left auricle is encroached upon by a large mass of fat projecting into its interior, and the lower half of the left ventricle is occupied by a tumour of the same kind as that in the right ventricle. The valves and the aorta are healthy.

The heart weighed two pounds three ounces : the weight of the fat added to it is therefore about twenty-five ounces. The Sheep from which it was taken was very inactive, and had dyspnœa on exertion. There was a great accumulation of fat around the kidneys. The left pleura and the pericardium each contained half a pint of fluid.

From the Museum of George Langstaff, Esq.

Inflammation of the Pericardium.

2912. A section of a heart, exhibiting the effects of recent acute pericarditis. The whole of the pericardium is covered with a layer of soft coagulated lymph, about a line in thickness, the surface of which, raised in thin small intersecting ridges, presents a finely reticulated appearance somewhat resembling that of the interior of the fourth stomach of a calf. About the base of the heart, some thick round columns or soft cords of lymph pass from one pericardial surface to the other. The parietal layer is considerably thickened.

This specimen was described in the Hunterian MS. Catalogue as "The heart of a man who died of a fever and violent pain and oppression of his breast. The whole heart is covered with gluten, from inflammation, which made the pericardium adhere." And, referring to this preparation in his lectures, Mr. Hunter said :—" It

appears from observation that some surfaces are more capable of throwing out this matter than others are, or it may be that some surfaces adhere later than others: hence the coagulable lymph is continued longer pouring out: this is very observable in inflammation of the heart. In this preparation, which is of a human heart, you see it furred thick with the coagulable lymph over its whole surface, but no adhesion had taken place."—*Hunterian Reminiscences*, by Mr. James Parkinson. London, 4to, 1833, p. 62.

2913. The heart of a Negro, of which nearly the entire surface is covered with a delicate layer of coagulated lymph, in some places of a finely reticulated character, in others drawn out into slender filaments.

Presented by Sir Stephen L. Hammick.

2914. A heart, the greater part of the surface of which is covered with a thick layer of recently deposited reticulated lymph, very like that in No. 2912.

From a man, 20 years of age, who died on the twenty-third day from the commencement of an attack of pericarditis.

Presented by Sir Stephen L. Hammick.

2915. An enlarged heart, showing the results of extensive and probably oft-repeated pericarditis. The visceral layer is rough from the deposit of lymph, and the parietal layer is everywhere much thickened.

From a youth, aged 19. He was able to walk about till his death, which occurred suddenly.

Presented by Dr. Peacock, 1871.

2916. The heart of a child, the whole surface of which is covered with a thin and delicately reticular layer of soft lymph. The blood-vessels are injected, and injection appears to have passed in several places into the lymph.

From the Museum of Sir A. P. Cooper.

2917. A heart suspended in its pericardium. The under surface of the serous membrane is ragged and has a portion of the liver attached to it. It formed the wall of an hepatic abscess which opened into the pericardial sac by an opening a

quarter of an inch in diameter. A thin layer of lymph covers the surface of the heart and the parietal pericardium. The valves are all healthy.

From a sailor, 29 years of age, who had returned recently from the East Indies. He is said to have been quite well till he took cold in this country; but he suffered from symptoms of cardiac disturbance for the last eight months of his life. He died somewhat suddenly with excruciating pain at the pit of the stomach.

At the inspection, the chest was found filled by the distended pericardium containing not less than four pints of sero-purulent fluid. At the apex the pericardium was thin and protruded inwards by the pressure of a large abscess in the liver. The heart was healthy. The left lobe of the liver was almost entirely occupied by one large abscess which opened into the pericardium.

The case is recorded in the Trans. Path. Soc. vol. ii. 1848-50, p. 70.

Presented by Dr. Peacock, 1876.

2918. The heart of an Ox, very much enlarged, and invested with a thick layer of recently deposited coagulated lymph, which presents a coarsely reticular and knotted surface and some long columns, that connected the pericardial surfaces, but now appear suspended from its surface.

Presented by William Clift, Esq.

2919. Section of a heart, on the pericardial surface of which there is a very thin layer of finely reticulated coagulated lymph, like that last described, but not injected.

Hunterian.

2920. A heart, with the greater part of the pericardium. The opposite surfaces of the pericardium, through their whole extent, are thickly covered with lymph, of which some is firmly adherent and nearly smooth, as if it were completely organized, while other parts, which appear to have been more recently formed, and in some situations cover the firm smooth deposit, are soft, loosely attached, and have a finely reticular surface. The interior of the heart and its valves are healthy, and it has nearly its natural dimensions.

From a woman 46 years old, who lived intemperately, and had several attacks of acute rheumatism.

From the Museum of George Langstaff, Esq.

Adhesions and Adherent Pericardium.

2921. Portion of a heart, to parts of the surface of which the opposite layer of the pericardium is firmly adherent by well-organized false membrane. *Hunterian.*

2922. A heart, with its pericardium adherent and the left ventricle dilated. There are small vegetations on the edge of the mitral valve, and the aortic valves are thickened.

From a girl aged 9, who had suffered from acute rheumatism six months before her death. There was a systolic bruit at the apex of the heart during life.

Presented by Dr. Peacock, 1876.

2923. A heart enlarged after acute rheumatism. The pericardium is everywhere closely adherent; but a portion of its external layer being removed, soft coagulated lymph is shown, as if recently deposited among adhesions of long standing. The cavities of the heart have been opened, to show that the valves are practically healthy.

Presented by David Dundas, Esq.

The following letter accompanied the preparation:—

“DEAR SIR,

“*Richmond, 18th August, 1808.*

“The preparation of enlarged heart, which I brought to the College a fortnight ago, is to exemplify a disease of that organ which is not described by any author that I am acquainted with, but which, from the number of cases which have fallen under my observation, is, I apprehend, very frequent in this country.

“The most remarkable circumstance of this disease is its being always connected with, or subsequent to, an attack of acute rheumatism.

“The patient complains of great anxiety and oppression at the præcordia, has generally a short cough and a difficulty of breathing, which is so much increased by motion, or by any exertion, as to produce an apprehension that the smallest increase of the motion would occasion fatal effects.

“The difficulty of breathing is also aggravated by taking even a small quantity of food. He prefers lying on the back, complains of great palpitation of the heart and violent pulsation of the carotid arteries, accompanied with noise in the ears and giddiness of the head. The action of the heart is often so strong as to be distinctly

heard, and to agitate the bed the patient is in so much, that I have counted the pulse of the person by looking at the curtains of the bed.

“Towards the conclusion of the disease symptoms of water in the chest take place. The legs become œdematous, and frequently a considerable quantity of water is accumulated in the cavity of the abdomen.

“In some cases the disease has been very rapid in its progress, not lasting above four or six weeks; in others it has run on for one or even more than two years. I have only seen one person who has recovered, and I have opened nine persons who have died of the disease.

“The heart has been uniformly found much enlarged in bulk: in one case water was found in the pericardium, in all the others the pericardium adhered to the heart. The heart itself was sometimes nearly three times the size of a healthy heart. The muscular structure is not increased in thickness beyond what it commonly is, so that its powers of action are not augmented proportionally to its bulk. It has also been generally found of an unusual pale colour, and very soft and tender in its texture.

“I am, dear Sir,

“Your faithful humble Servant,

“*George Chandler, Esq.*”

“DAVID DUNDAS.”

This letter possesses considerable interest, in that it contains one of the first circumstantial accounts of the connection between rheumatism and diseases of the heart. It is embodied with the histories of several cases in “*An Account of a Peculiar Disease of the Heart, by David Dundas, Esq.,*” which was read before the Medical and Chirurgical Society of London on November 20th, 1808, and published in the first volume of their ‘*Transactions*’ (London, 1809).

Of the previous notices of the rheumatic diseases of the heart, the first appears to be that by Dr. Jenner, who, about the year 1788, read a paper on the subject at the Medico-Convivial Society in Gloucestershire. But this paper has been lost, and its contents are unknown. (See Dr. Baron’s ‘*Life of Edward Jenner,*’ vol. i. p. 46.) Dr. Baillie (chiefly on the authority of Dr. Pitcairn) alluded to the existence of rheumatism of the heart in the second edition of his ‘*Morbid Anatomy,*’ published in 1797 (in a note at p. 46). And M. Odier, in his ‘*Manuel de Médecine Pratique,*’ which was first published in 1803, and consists of the substance of lectures delivered by him in 1799 and 1800, spoke plainly, and at some length, of the metastasis of rheumatism in various internal organs, of the signs of the affections of the heart, and of the changes of structure consequent on acute pericarditis (see pp. 83 & 254, ed. 1811).

2924. A heart, showing general adhesion of the pericardium, thickening of the aortic valves, dilatation of the left ven-

tricle, secondary dilatation of the mitral valve, and a general enlargement of the whole organ. One of the flaps of the aortic valve fell back below the level of the others, and allowed free regurgitation. The heart weighed 25 oz.

The girl from whom the specimen was taken was 15 years of age. She had had an attack of acute rheumatism six years before her death, and had suffered from cardiac symptoms for four years. She had severe dyspnœa, cough, expectoration, some œdema of the face and lower extremities. The præcordial region was very prominent, the dulness on percussion increased in extent, and the pulsation of the heart was widely diffused. The pulse was very irregular; a loud systolic murmur was heard over the whole præcordia, but was most intense below the nipple; there was also a double murmur heard at the base. She died from an attack of diarrhœa and sickness. The case is quoted in Dr. Peacock's work as one of widening and consequent incompetence of the mitral orifice, the result of dilatation of the left ventricle ('Valvular Disease of the Heart,' p. 56).

Presented by Dr. Peacock, 1876.

Calcareous Formations.

2925. Portion of cardiac pericardium, thickened and extensively calcified. It has been dried and preserved in turpentine.

From the Museum of George Langstaff, Esq.

- 2925 A. A heart, dried, after the distension of its cavities. It appears to have been of natural size. In the line between the auricles and ventricles are a few thin plates of calcareous matter. Other plates of various forms exist on the walls of the ventricles and auricles; the largest of them covers nearly all the posterior wall of the right ventricle and a large portion of that of the right auricle. There is also a large quantity of bone about the apex of the heart. All the bone has coarsely granulated surfaces, and the several portions have no regularity of shape or arrangement.

The specimen is engraved in Dr. Baillie's 'Illustrations of Morbid Anatomy,' fasc. i. pl. 5, and in the first volume of the 'Medical Communications,' London, 1784, pl. 7, where also a history of the case is recorded by Dr. Samuel Foart Simmons, and an account of the dissection by Mr. Henry Watson.

The patient was a tall stout man, 67 years old, and had enjoyed good health till six months before his death, when he began to suffer "pain constant and lancinating, extending from about the lower part of the œsophagus to the left side of his chest." With these he had other symptoms, which Dr. Simmons "did not hesitate to ascribe to a cancerous tumour or ulcer about the upper orifice of the stomach." "His pulse was languid, but about 100 strokes in a minute, and frequently intermitted."

In the post-mortem examination a large ulcer of the œsophagus was found, which, much more than this disease of the heart, appears to have caused the patient's death. There was complete adhesion of the pericardium.

From the Museum of John Heaviside, Esq.

2926. A heart, showing a calcareous change in an adherent pericardium. The heart is large and encased in an extremely thick layer of yellowish-white substance, which is for the most part calcareous. A portion of the pericardium has been removed to show the apex of the heart. The muscular wall is seen by the section to be considerably encroached upon and changed into a similar material. A thin greyish line may be seen about halfway through the thickened wall, which corresponds to the plane of the normal pericardium. The muscle is gelatinous-looking, and some of the chordæ tendineæ are very thin.

The patient, a man aged 37, of healthy parentage, enjoyed good health till he was 18 years of age. He then had severe pneumonia, and, some years after, a sharp attack of rheumatic fever. He recovered, and worked as an agricultural labourer pretty regularly till within four years of his death, when he became quite laid aside. His symptoms at that time were great weakness, hurried respiration on any exertion, and moderate cough. The pulse was very rarely irregular, in general nearly normal. The skin was so deeply bronzed in parts of the body as to suggest Addison's disease. There was no dropsy, and the urine was not albuminous. The autopsy showed firm adhesions of the pleura. The suprarenal capsules were healthy.

Presented by William Day Ditchett, Esq., 1874.

2927. A section of the heart and pericardium from the preceding specimen. The pericardium is a third of an inch thick, and its section has the appearance of a tough thick fascia

containing calcareous deposit. The gelatinous appearance of the muscular structure of the heart is also well seen.

Presented by William Day Ditchett, Esq., 1874.

2928. A heart, in the walls of the ventricles of which is a large deposit of hard white calcareous matter, in thick irregular lamelliform masses, lying immediately beneath the pericardium. It is most abundant over the whole surface of the right and the posterior and upper part of the left ventricle.

From a man 45 years of age. He had complained for years of uneasy sensations about the heart, with great irregularity of pulse; the beats were never more than sixty in a minute, and during the last month of his existence not more than thirty-six. He had great dyspnœa; the face was turgid, and the legs œdematous up to the knees. Latterly he became drowsy and comatose.

Presented by Sir Stephen L. Hammick.

2929. Portion of the right ventricle of a heart, in which a mass of firm substance, mixed with white earthy matter, is imbedded on the surface of the muscular tissue. It is of a flattened oval form, about three fourths of an inch in one, and half an inch in the other diameter, and loosely connected with the adjacent tissues. The opposed surfaces of the pericardium contiguous to it were adherent, but portions of them are removed so as to expose its exterior.

“Of the Appearances upon opening the Body of Mr. Coxwell, Apothecary.

“The cartilages of the ribs were changed for bone, and the cartilage of the first rib on the right side was not only changed for bone, but there was a luxuriant protuberance shot out from its inner surface, which made a dent in the lungs opposite to it. The pericardium adhered to the heart everywhere. On the anterior surface of the heart these adhesions were the firmest; and just opposite to the right ventricle there was a bony substance formed in the pericardium, about the size of a sixpence. On the lower and posterior surface the adhesions were not so strong, and it seemed to be by a bloody coagulable lymph, which could be separated both from the heart and pericardium.

“The substance of the heart itself was slender, not flabby and tough, as we sometimes find it. The valves of the aorta were

ossified, and the inner coat of the aorta itself was not sound. No particular disease in any other part. He had been early and much afflicted with the gout, often attacking his feet, and he often removed it immediately by putting his feet into cold water. I do not know if he had any visible reason to suppose that there was any translation of the gouty action to the heart. He was of an anxious mind, had obscurely spent a fortune, lost the principal part of his business, was in distress, and was rather scheming how to live with two children. How far his circumstances might have become a cause of the disease, or how far it might have increased it when begun, I will not at present say."—*Hunterian MS.: Cases and Dissections*, No. 34.

Before the preceding description, Mr. Hunter placed in his manuscripts a copy of a case as related by the patient himself, Mr. Holder, a surgeon, of which case he says:—"The following case was so similar to that of Mr. Coxwell, that he considered it as a description of his own; it is therefore given here as a substitute for that of Mr. Coxwell." The same case, with fuller details, and with the title, "The Case of Mr. Holder, by Mr. Richard Brown Cheston," is published in the 'Medical Observations and Enquiries,' vol. vi. p. 31 (8vo, London, 1784).

Tubercle.

2930. The thoracic viscera of a Baboon which died from extensive tuberculosis (see preparations 3574, 3773). The pericardium is studded with masses of tubercle, and completely adherent. The bronchial glands are greatly enlarged; the pleura has numerous tubercular masses upon its surface, and is thickened and coated with lymph. In the section, which has been made of both lungs, no distinct tubercle is to be seen; but the lungs look solid and infiltrated throughout. In the muscular substance of the ventricle there is a small deposit.

Presented by the Zoological Society, 1864.

Morbid Growths.

2931. A heart divided transversely and completely encased in a thick layer of cancer, which was believed to have originated in the pericardium. The disease in some parts reaches an inch in thickness, and it compresses the auricles and the large vessels at the base of the heart, forming a perfect union between the two layers of the

serous membrane. The heart and its valves appear to be healthy.

From a youth of 18, who stated that his father died of cancer of the heart. His illness began with diarrhoea, and was followed by lassitude and hæmoptysis, but without any marked signs of thoracic disease. The heart occupied its natural position, and the sounds were natural. Death ensued from exhaustion and anasarca. At the inspection the lungs, mediastinal glands, liver, and other parts were cancerous. The case is recorded in the 'Transactions of the Pathological Society,' vol. xvi. p. 99.

Presented by Dr. Peacock.

2932. A heart, the surface of which is rough and wrinkled by the growth of a tumour, probably lympho-sarcoma, in the soft pericardial connective tissue. A large growth surrounds the great vessels at the root of the heart.

From a patient who had disease of the cervical glands, which rapidly involved the adjacent parts, compressing the lung, affecting the mediastinal and bronchial glands, and leading to effusion in the right pleural sac, from compression of the descending cava and large vessels of the right auricle. There were deposits in the right pleura and in the right lung.

Presented by Dr. Peacock, 1876.

Subseries 2. DISEASES OF THE SUBSTANCE OF THE HEART.

Hypertrophy : 2915, 2918, 2923-24, 2926, 2933 to 2935, 2950, 2954, 2981, 2982, 2991, 2994, 2996, 3007, 3011, 3013-14, 3016, 3018, 3020, 3022, 3031, 3036 to 3040.

Of Right side : 2937, 2955, 2991 to 2994, 3010-11.

Dilatation : 2922, 2924, 2933-34, 2936, 2938 A, 2942, 2950, 2979, 2981-82, 2994, 2996, 2998, 3006 to 3008, 3013-14, 3016, 3018, 3020, 3031, 3040.

Of Auricles : 2976, 2990, 2992, 2996, 2998, 3009.

Of Right side : 2937-38, 2955, 2993-94.

Atrophy : 2910, 2926-27.

Fatty Degeneration : 2941 to 2944, 2945 ?

Inflammation :—

Acute : 2945.

Abscess : 2946 to 2948.

Chronic or Fibroid : 2926-27, 2949 to 2956, 2958, 2990-91.

Aneurism of Ventricle : 2949 to 2957.

„ of Auricle : 2995-96.

Rupture of Muscle : 2942 to 2945, 2956-57.

Effects of Dilatation—Thrombosis : 2938-39, 2949, 2951, 2953, 2955, 2992, 2995.

Polypi : 2938-39.

Abnormal bands across Septum : 3018.

Tubercle : 2930.

Syphilis : 2959.

Morbid Growths : 2959 to 2966.

Cysts : 2962.

Lipoma : 2911?

Lympho-sarcoma : 2963.

Cancer : 2964.

Melanotic Disease : 2965-66.

Parasites : 2948?, 2967 to 2972.

Diseases of Vessels of Heart :—

Atheroma of Coronary Vessels : 2936, 2943-44, 2952-53, 2955, 3032, 3034.

Aneurism of Coronary Artery : 3033.

Hypertrophy.

2933. A heart weighing $18\frac{3}{4}$ oz. The left ventricle is considerably dilated, but none of the valves are materially diseased. The walls are somewhat thin, but not in proportion to the degree of dilatation.

The patient, a plasterer, aged 56, had been subject to gout for twenty years. He suffered with cough, difficulty of breathing, and dropsy. The urine contained albumen, was of low specific gravity, and scanty. The pulse was feeble and irregular. A harsh systolic murmur was present at the apex of the heart. The case is recorded in Peacock on 'Valvular Disease of the Heart,' p. 62.

Presented by Dr. Peacock, 1876.

2934. A section, cut transversely, from the middle of a heart, and showing both ventricles enlarged and dilated by simple growth. The walls of the left ventricle, in which the hyper-

trophy is greater than in the right ventricle, are upwards of an inch thick, and very compact and strong.

From a patient who had disease of the aortic valves.

Presented by Sir James Paget.

2935. A heart, from which the apex has been cut-away to show that the cavity of the left ventricle is nearly closed by the fixed contraction of its walls in the *rigor mortis*. It is in the state which some have called concentric hypertrophy ; but the thickening of the ventricular walls is only the result of the shortening and swelling of the muscular fibres in the contracted state. *Presented by Sir James Paget.*

Dilatation.

2936. Part of the left ventricle of a heart, with the beginning of the aorta. The cavity of the ventricle was very large, but its walls do not exceed four lines in their greatest thickness, and their tissue is very pale and flaccid ; there is no accumulation of fat upon them. Near the attachment of the mitral valve a mass of granular earthy matter, half an inch in diameter, is imbedded in the wall, and extends nearly to its outer surface, from which a layer has been removed to expose the mass more fully. The aortic, and what is preserved of the mitral, valves are healthy. There are deposits of opaque yellow fatty matter in the coronary arteries.

From a man, 73 years old, who was subject to palpitation of the heart and dyspnoea for many years. The pulse was generally intermittent, his breathing laborious, and occasionally he had paroxysms which seemed to threaten complete asphyxia. The heart's action could be felt over a very wide extent. For the last eight months of his life he had general dropsy. He died suddenly. After death the pericardium contained seven ounces of fluid. The whole length of the aorta was beset with fatty and calcareous deposits. The right side of the heart was deemed healthy. The liver was granulated.

From the Museum of George Langstaff, Esq.

2937. A heart, showing extreme dilatation of the right ventricle, with hypertrophy of its wall. The foramen ovale is partially open, probably by a failure of its musculo-membranous fold from over-expansion. The heart weighed $12\frac{1}{2}$ oz. The valves are healthy.

The patient, a woman 24 years of age, suffered from a curved spine and deformed chest, and was remarkably livid during the last years of her life. The lividity, however, was probably not due to any admixture of arterial and venous blood, but to the hindrance to the free passage of blood through the lungs due to the deformity of the chest. (Trans. Path. Soc. vol. x. p. 101.)

Presented by Dr. Peacock, 1876.

2938. Portion of the right ventricle of a dilated heart, in which there are numerous small bodies of round and oval forms adhering among the prominent fasciculi of muscle (*Végétations globuleuses*, Laennec). The largest of them having been opened presents a central cavity, which was filled with "a kind of glairy mucus," and whose walls are composed of concentric layers of fibrine or, more probably, of decolorized blood-clot. *Hunterian.*

- 2938 A. A heart, dried, after the injection of its cavities and the great vessels. All its cavities, but especially the auricles, are much larger than is natural; the vessels are of little more than the ordinary size. *Hunterian.*

2939. A heart, in which a nearly spherical tumour, an inch and a half in diameter, is attached to the anterior and lower part of the wall of the right auricle, nearly filling its cavity, and projecting into the auriculo-ventricular orifice, so as to hold the portions of the tricuspid valve far apart. The cut surfaces of the tumour indicate that it is formed from a coagulum of blood. It is composed of a compact, but not hard, substance, which, when recent, presented various shades of colour (crimson, pink, and pale brown) like those of coagula of blood more or less decolorized. A thin exterior layer, of the same substance as the rest, but paler, is distinctly laminated. The part of the tumour which is attached to, and appears imbedded in, the wall of the

auricle is very pale and soft. The wall of the auricle is thin, and on its external surface, at the part corresponding to that on which the tumour inside is fixed, there is a circumscribed roughness, as if some adhesions had been broken down. The rest of the heart is healthy.

2940. A portion of the base of the heart, with the auricular septum, showing a sacculated expansion of the membrane covering the foramen ovale. A bulging teat-like sac protrudes from the right auricle into the left. The valve was not completely adherent at its margins, but apparently no communication had existed between the auricles.

From a woman, aged 54, who had long suffered with pulmonary symptoms, and who died of phthisis, apparently of a fibroid nature. The heart was generally hypertrophied and dilated, but the valves were healthy. (Trans. Path. Soc. vol. iii. p. 80.)

Presented by Dr. Peacock, 1876.

Fatty Degeneration.

2941. Part of the base of a heart, including the mitral and aortic valves. The muscular part of the wall of the left ventricle and auricle is very thin and pale, and is so nearly degenerated into fat that it is hardly distinguishable from the thick layer of fat with which it is covered. The valves and the lining membrane of the auricle are thickened and opaque.

From a woman, 60 years old, who had long had signs of diseased heart, attended, near the end of her life, with hydrothorax and ascites.

From the Museum of George Langstaff, Esq.

2942. A heart, generally enlarged by the dilatation of its cavities. Its muscular tissue is thin and very pale, and covered with an unnatural quantity of fat. A rupture, in the shape of an oblique rent nearly an inch long, has taken place through the anterior wall of the left ventricle, an inch from its base, and about half an inch from the septum.

The patient was a widow, 62 years old, who for some time

before her death had been growing corpulent. She had been subject to a cough for fifteen years, which was aggravated in winter, and for the last two years of her life was attended with dyspnoea. The latter sign was increased by exercise or by lying down. Five days before her death she had a sudden pain across her chest and down her arm, which ceased in a few hours. Two days afterwards she had a similar attack. Her death was almost instantaneous; she was standing and applying some leeches on a sick person, when she dropped down and expired.

There was a large quantity of fluid and coagulated blood in the pericardium. The liver was very large, and some dark-coloured blood was effused into its substance near its upper surface.

Presented by Titus Owen, Esq.

2943. A heart, in which a rupture of the interventricular septum has occurred after fatty degeneration of the muscular fibre. The laceration is mostly on the posterior part of the ventricle, and extends from the mitral curtain above downwards to the right. It opens into the right ventricle by an oblique rent at the lower part. Posteriorly it perforates the entire thickness of the wall of the ventricle so as to be separated from the cavity of the pericardium only by a serous covering. The anterior wall of the ventricle is much hypertrophied, but not the posterior. It is difficult to explain this local thickening, for the valves appear healthy except a rather tough nodule at the base of the left anterior aortic cusp. The spirit has destroyed much of the appearance of fatty degeneration in the muscle, but in the fresh condition it was obviously diseased.

The heart was large, weighing $14\frac{1}{2}$ oz., and the coronary artery was atheromatous. The other viscera were not examined.

The subject of this disease was a gentleman aged 62, of good general health and accustomed to free daily exercise. Four or five days before his death he complained, on his return home in the evening, of a slight pain exactly over the ensiform cartilage. He had occasionally suffered from muscular pains, and was treated accordingly. He was soon relieved, and returned to business. Just before death, after a light dinner, he hurried upstairs, undressed rapidly, and went into bed. His wife then noticed that his breathing was rapid. Immediately after he jumped-up, went to the night-chair, and again lay down. His breathing became more rapid, and he died in about an hour from the onset of the seizure. (Trans. Path. Soc. vol. v. p. 102.)

Presented by Dr. Peacock, 1876.

2944. Portion of the left ventricle of a heart, the muscular substance of which is pale, flaccid, and nearly covered with a thick layer of soft fat. At the anterior part, by the side of the septum, and about two inches from the apex of the ventricle, there is an irregularly torn aperture through its walls, large enough to admit a writing-quill. At the commencement of the aorta, and in the trunks of the coronary arteries, there are several large deposits of earthy matter, by one of which the left coronary artery is obliterated.

The patient was a lady 68 years old, corpulent and sedentary, who had suffered dyspnoea for six years before her death. Five months before death she had a slight apoplectic fit, which was succeeded by permanent numbness of the left arm and leg, and increase of the dyspnoea. Her pulse was usually intermittent, hard, and small, and the least exertion nearly produced syncope. Sixteen hours before death she was awakened from sleep by a violent pain in the region of the heart; she became very anxious, and her respiration was hurried. She was bled, and the pain was relieved; but she continued restless, her pulse became weaker, and she suddenly expired.

The pericardium contained, after death, about twelve ounces of dark coagulated blood.

From the Museum of George Langstaff, Esq.

Acute Inflammation (Myocarditis) and Abscess.

2945. Part of the apex of a heart affected with acute myocarditis. It exhibits two small ruptures of the wall of the right ventricle, near the septum. The edges of the apertures are uneven and ragged, and the muscular tissue looks granular; the part of the wall through which they pass has only a thin layer of muscular tissue, and, like all the adjacent part, is thickly invested with fat.

The patient was a robust plethoric man, 47 years old. Inflammation of the heart ensued during an attack of acute rheumatism of the hands and feet, and he died suddenly on the fourth day. A large quantity of fluid blood was found in the pericardium. The heart was of natural size, and there were no signs of long-standing organic disease; but indications were found of recent inflammation, both within and without the heart.

From the Museum of George Langstaff, Esq.

2946. A heart, in the muscular substance of which are two small cavities which contained pus. One is situated near the apex, rather to the posterior aspect; the other in front of the left ventricle, near the septum.

From a lad of 17, of scrofulous habit, suffering from ulceration and suppuration of the shoulder and wrist-joints. For some time before his death he had very frequent vomiting.

Presented by Sir Stephen L. Hammick.

2947. The heart of a child, the external surface of which is covered with lymph, and which has abscesses in its muscular walls. One of these in the septum ventriculorum has been opened from the right ventricle; it runs below, but nearly parallel to, the pulmonary valves.

The child died from pyæmia, with acute osteitis of the femur.

Presented by Dr. Goodhart, 1873.

2948. Portion of the left ventricle of the heart of an Ox, in the substance of which is a round tumour, nearly an inch in diameter, of soft consistence, and enclosed in a distinct cavity. It looks not unlike the remains of some entozoon, but under the microscope its chief component appears to be pus, the cells of which have, even at this date, the usual appearance. The white-looking wall is muscular fibre much changed by an infiltration of fibrous and granular material. Many small acicular crystals of some fatty acid are present, but nothing indicative of any entozoon. It is therefore probably an obsolete abscess, such as is frequently met with in other parts in some of the lower animals.

Presented by Sir William Blizard.

CHRONIC INFLAMMATION—*Including Fibroid Changes in the Wall of the Heart and the resulting partial Dilatation, or Aneurism of the Heart.*

2949. Portion of the left ventricle of a heart, with an aneurism projecting from the upper part of its posterior wall, near the septum, and just behind the mitral valve. The sac of

the aneurism is half-full of laminated and loose fibrinous coagula: its wall is formed only by the endocardium and cardiac pericardium, distended, thickened, and adherent to the parietal pericardium; its cavity communicates with that of the ventricle by a circular aperture three fourths of an inch wide, with smoothly rounded margins. Around this aperture the muscular tissue of the heart appears to have been absorbed, and the endocardium is thickened, opaque, white, very tough, and compact. *Hunterian.*

2950. A heart exhibiting an aneurismal dilatation of a small part of the posterior wall of the left ventricle near the septum, and just below the attachment of the mitral valve. The sac of the aneurism is hemispherical, and nearly an inch and a half in diameter; its orifice is circular, and the lining membrane of the heart around it is irregularly thickened; its exterior is smooth, and crossed by a main branch of the left coronary artery. The left ventricle is generally dilated and somewhat hypertrophied; its lining membrane is in many places thickened; but the heart is in other respects healthy.

From a woman 52 years old, a drunkard, who had signs of disease of the heart for two years.

For the last year of her life she had ascites and general anasarca: and for some days before her death her breathing was extremely difficult, her face suffused, her pulse regular, but very small, and beating 120 times in the minute.

Some further account of the case is published by Mr. Thurnam, in a paper "On Aneurisms of the Heart," in the 'Medico-Chirurgical Transactions,' vol. xxi. p. 204 (London, 1838).

From the Museum of George Langstaff, Esq.

2951. The anterior and right half of the left ventricle, showing fibroid degeneration and atrophy of the muscular wall. On the anterior wall of the ventricle above the apex the investing pericardium presented some false membrane and, at the same spot, the surface of the heart bulged slightly. A section through this showed a very decided aneurismal thinning of the muscle, and that around it is replaced by a white fibro-cartilaginous tissue. The cavity thus formed

by the bulging of the wall of the ventricle is filled with firm blood-clot, between which and the ventricular wall a bristle has been passed. Both coronary arteries were extensively diseased and ossified, and the left, as seen in the preparation, is partly contracted in its calibre.

From a watchmaker aged 70, who died insane at York with gangrene of the lungs. The case is described by Dr. Thurnam in a paper "On Aneurism of the Heart," in the 'Medico-Chirurgical Transactions,' 1838, vol. xxi. p. 229.

Presented by Dr. Thurnam, 1871.

2952. A section of the left ventricle of a heart, showing extensive aneurismal dilatation of the apex. The wall of the sac is composed of a thin, tough, fibrous material, and the muscular tissue has almost disappeared. The endocardium has undergone much thickening. The heart weighed $13\frac{1}{2}$ oz. The pericardium contained two ounces of serum, and the aortic and mitral valves were slightly thickened. The coronary arteries were somewhat thickened, but not narrowed or obstructed. The aneurism formed a slight bulging on the surface, and flocculent vegetations were commencing to form on the visceral layer of the pericardium.

From an insane patient aged 71, who died suddenly after a paroxysm of cough.

Presented by Dr. Thurnam, 1871.

2953. A portion of a heart with an aneurism at the apex of the left ventricle. The muscular fibre is very thin and is replaced by a tough layer of fibroid material, the whole thickness hardly exceeding a line. The pericardium was universally adherent by flocculent false membrane. The endocardium was entire throughout; the meshes of the fleshy columns were stretched and flattened, and at the bottom of the aneurismal sac a small coagulum had commenced to form. The rest of the left ventricle was slightly hypertrophied. The mitral and aortic valves were somewhat thick, and both the coronary arteries were converted into rigid tubes. The heart weighed $9\frac{3}{4}$ oz.

From an insane patient aged 70, who died suddenly in an asylum.

The three foregoing cases are referred to by Dr. Thurnam in his paper "On Aneurism of the Heart," in the 'Medico-Chirurgical Transactions,' 1838, and by Dr. Peacock in the 'Edinburgh Medical and Surgical Journal,' 1846, pp. 272, 273. See also Path. Soc. Trans. vol. xxv. 1874.

Presented by Dr. Thurnam, 1871.

2954. A portion of the left ventricle of a heart, showing fibroid disease of the muscular wall at the apex leading to aneurismal dilatation. The adjacent endocardium is thick, but there is no evidence of any previous pericarditis. The ventricle is hypertrophied in other parts.

Presented by Dr. Peacock, 1876.

2955. A section of a heart showing fibroid disease of the muscular wall at the apex of the left ventricle leading to bulging and "partial aneurism." The cavity thus formed is lined by a thick mass of laminated and decolorized coagulum. The pericardium is healthy. The mitral and aortic valves and the aorta are atheromatous. The right ventricle is dilated and hypertrophied, and the coronary arteries extremely diseased.

From a man between 60 and 70, a shoemaker. He had suffered from distressing dyspnœa, and for some weeks before his death the pain in the region of the heart was agonizing. (Path. Soc. Trans. vol. v. p. 96.)

Presented by Dr. Peacock, 1876.

2956. A heart, which is the seat of a large aneurismal dilatation at the posterior part of the apex of the left ventricle. The muscular wall has disappeared in that part which forms the sac, and is represented by a tough fibrous membrane which consists largely of thickened pericardium. The muscular tissue beyond the dilatation is not unhealthy; and, except in a fibrous change in one of the muscoli papillares, there is not any evidence of a former endocarditis. The valves are healthy. There are extensive adhesions between

the heart and its pericardium. The heart is of normal size.

At the autopsy, the heart and pericardium occupied a large portion of the chest, the base extending to a higher level than usual, while the apex reached to the cartilage of the seventh rib. The pericardial adhesions were infiltrated with blood which had escaped from the aneurismal sac, but no distinct laceration at any one spot was found.

The patient was a commercial traveller of very irregular habits, who had always enjoyed the most robust health. He had never had rheumatism. About three months before death he was suddenly seized with pain in the head, dizziness, and sickness. A fortnight elapsed, during which he got better and continued a journey, but he subsequently relapsed, became jaundiced, and fluid accumulated in his right pleural cavity. The heart-sounds were normal, and throughout his illness no disease of the heart was suspected. He died with extreme dyspnoea and lividity.

For the full account of this case see 'Edinburgh Med. and Surg. Journal,' 1846, vol. ii. p. 261; Cases of Partial Aneurism of the Heart.

Presented by Dr. Peacock, 1876.

2957. The heart of a Goose which died suddenly. An aneurismal pouch extends from the apex of the left ventricle, a slight external constriction marking the line of separation between them. At this constriction a rupture, which is indicated by a curved bristle, took place, and permitted the effusion of blood into the pericardium. The foramen ovale is not completely closed.

The nature of this condition appears very doubtful. The preceding specimens are all associated with fibroid changes in the muscle. This is not. The wall of the so-called aneurism is composed of healthy muscle, and it appears that there has been some external adhesion constricting the ventricle at one part and shutting-off the apex from the remainder. There is evidence of a local adhesion of the pericardium, and this may have induced an annular constriction.

Presented by the Council of the Zoological Society.

2958. The base of a heart, showing thickening of the peri- and endocardium with hypertrophy and extensive fibroid degeneration of the muscular walls. Whether in consequence of this, as seems most likely, or as part of some common disease of all these parts, or perhaps as an independent

condition, there is extreme contraction of the pulmonary artery at its origin, and thickening of the tissue connecting it with the adjacent part. The tricuspid valve is healthy, and the valves of the left side do not appear to be diseased.

Presented by Dr. Lediard.

Syphilis.

2959. A heart with several hard yellowish-white nodules about the size of peas imbedded in the muscular substance. The muscular tissue apart from these appears to be healthy, and the valves also are healthy.

From a railway porter aged 39, who contracted primary syphilis three years before his death, but never suffered from any secondary rash, sore throat, or nodes. Four months before his death he was attacked by severe headache, and when admitted to the Infirmary at Hull he was thin, anæmic, of vacant expression, and with large and sluggish pupils. The headache increased and was associated with dimness of vision and tottering gait. He became extremely emaciated and then comatose, and in this state remained for the last six weeks of his life. The lungs, heart, kidney, liver, pancreas, and brain were all affected with gummata.

Presented by T. Melancthon Evans, Esq., 1866.

Morbid Growths.

2960. Section of the left ventricle of a heart, in which, near its apex, a small oval mass of pale, firm, medullary substance is imbedded. The adjacent muscular tissue appears unaltered.

The patient, a man 42 years old, had medullary tumours in the arm, ilium, lungs, and bronchial glands. His case is recorded by Mr. Stanley in the 'Medico-Chirurgical Transactions,' vol. xxviii. p. 317 (London, 1845).

Presented by Edward Stanley, Esq.

2961. Part of a heart. Projecting from the upper and posterior inner surface of the right auricle is a circular, flattened, lobulated, and flocculent growth, about an inch in diameter. A considerable mass of the same growth is seen external

to the wall of the auricle, where it seems to have originated, and subsequently to have penetrated into the cavity. It is probably of a malignant nature.

From a seaman, 35 years of age, who was said to be suffering from secondary syphilis at the time of his death, which was supposed to be occasioned by the combined effects of this disease and mercury. The action of the heart had been very irregular.

Presented by Sir Stephen L. Hammick.

2962. The heart of a child, from the anterior aspect of which bulges a large cyst. It covers the anterior surface of the heart and the great vessels, filling the space between them and the sternum, of which the upper part is shown in the preparation. Its interior is granular, like the wall of some abscesses, but at its base is a firm solid growth.

Presented by Francis Kiernan, Esq., 1871.

2963. A heart with the tissue investing the posterior part of the auricles infiltrated by a thick soft growth. The ascending and descending venæ cavæ are pressed upon and the pulmonary veins are obstructed and much narrowed at their orifices.

From a girl, aged 19. She had been ill for six months, and her illness commenced with pain in the left side followed by cough, hæmoptysis, and nocturnal perspirations. She had severe dyspnoea, cough, and purulent expectoration. The respirations were rapid, pulse 44. The whole of the left side of the chest was dull on percussion, and the vocal thrill stifled. She complained of pain in the region of the heart, and its sounds were muffled and its action unduly powerful. Subsequently a soft systolic murmur was heard. She died gradually exhausted. At the inspection the left lung contained white soft cancerous material which had apparently invaded it from the mediastinal glands. The pericardium was invaded by the tumour, masses of which may be seen in the preparation. The stomach and duodenum were surrounded by enlarged and cancerous glands. The other viscera were healthy. (See Path. Soc. Trans. 1864-65, vol. xvi. p. 102.)

Presented by Dr. Peacock, 1876.

2964. The heart of a lady who died with alveolar cancer of the stomach. Its surface is in every part beset with small

circular growths of a soft, yellowish, flocculent substance. Some of these are concealed by a layer of soft false membrane, by which the heart was covered, but most of them are exposed by its removal, and appear to grow only from the surface of the heart. In many places the growths are isolated; in some, especially on the auricles, they are so thickly crowded together that they form a continuous layer about a quarter of an inch thick. The muscular substance of the heart is thin, pale, and flaccid.

The stomach is preserved in No. 2426.

From the Museum of George Langstaff, Esq.

2965. The half of a heart, through every part of which melanotic matter is deposited in small black spots. The tissue adjacent to the deposits is not discernibly altered.

The other portion of this heart, similarly diseased, is in the Museum of St. Bartholomew's Hospital. It was taken from a man aged 57, in whom the melanotic disease first appeared in the form of a tumour, between the umbilicus and pubes, where there had been a nævus. The tumour is preserved in No. 463; and the history of the case, which is recorded by Dr. Norris in the 'Transactions of the Provincial Medical and Surgical Association,' vol. iv. p. 437 (1836), may be found in Vol. I. p. 173.

Presented by Dr. Norris.

2966. A portion of a heart, the muscular substance of which is studded by small spots of melanotic cancer. A large flocculent mass of similar appearance partially fills the right auricular appendix. *Presented by Francis Kiernan, Esq., 1871.*

Entozoa in the Heart.

2967. Portion of the left ventricle of a bullock's heart, with a nearly globular cyst, two inches in diameter, imbedded in it. The walls of the cyst are a line in thickness, pale, dense, and compact. Externally, it is intimately attached to the substance of the heart; internally, it is smooth, with some patches of white earthy matter on it. It contains portions

of brownish shrivelled membrane, like those of acephalocyst hydatids, collapsed and half-dried, and other portions of membrane like those of well formed hydatids. *Hunterian.*

2968. Part of a bullock's heart, in which a large cyst, with walls partly bone-like, is attached to the apex of the cavity of the left ventricle. The cyst contains thin layers of opaque white membrane, like hydatid-membranes, and is probably a cyst which contracted, and had earthy matter deposited in its walls, after the rupture of acephalocyst hydatids.

Hunterian.

2969. A heart containing a number of hydatid cysts, originating in the septum ventriculorum, and opening into the right ventricle. The cysts have been exposed by a vertical incision in the posterior wall of the latter, and the ventricle has been opened in part. The heart is large, and its cavities dilated, particularly the right ventricle.

From a woman, aged 23. She was stout and florid, and was admitted to King's College Hospital in 1857, under Dr. George Budd. She had experienced more or less cough, shortness of breath, palpitation, and hæmoptysis for four years. She had considerable dyspnoea on exertion, and a short systolic rasp-sound was heard over the base of the heart, extending thence upwards to the right. The pulse was small and feeble. The bruit subsequently disappeared, but she gradually sank with all the symptoms of cardiac dropsy. At the autopsy, the heart was found of very irregular shape, due to an orange-sized hydatid tumour in the apex of the right ventricle. This had ruptured into the ventricle, and hydatid cysts were found in the pulmonary artery and the left lung. The pericardium contained an ounce of fluid and some old adhesions posteriorly.

Presented by Richard Partridge, Esq., 1868.

2970. A heart showing a suppurating hydatid cyst in the anterior aspect of the muscular wall of the left ventricle. The cyst is contracted and full of pultaceous hydatid membrane in which a few hooklets and their fragments were seen under the microscope. The inner surface of the wall of the left ventricle shows a thick whitish hard mass, which forms part of the cyst-wall, beneath the endocardium. The pericardium

is adherent, and in dissecting it back, about four ounces of pus flowed from the cyst.

From a man, aged 20, who suddenly fell dead. He had been well and laboriously occupied within half an hour of his decease; he had, however, complained of exhaustion after work some few minutes previously. The viscera, with this exception, were healthy. (Path. Soc. Trans. vol. xxvii. p. 72.)

Presented by H. Hodson Rugg, Esq., 1872.

2971. A heart much enlarged and with recent pericarditis over its whole surface. The ventricles are laid open, and in the substance of the septum is a cyst which contained hydatids; this projects into both ventricles, but the tricuspid valve is much more involved than the mitral. Both these valves are a little thickened at their edges. Much fat was deposited in the substance of the right ventricle.

From a man, aged 38. For twelve months before death he had had shortness of breath on exertion, and had in consequence become much less active in his habits. He attributed this change to his increasing obesity and attached no importance to it. Three weeks before his death he complained of a transient feeling of uneasiness in the region of the heart, and on his return from a fishing excursion about three days before death, he became much distressed in his breath after hurrying to catch a train. On the morning of the day of his death he was suddenly seized with sickness and shivering, which was thought to be probably due to ague, as he had recently been in a marshy district. The symptoms became more severe, and he died in a collapsed state in a few hours. (Path. Soc. Trans. vol. xxiv. p. 37.)

Presented by Dr. Peacock, 1876.

2972. Portion of the ventricle of a Pig's heart, in which, imbedded among its fibres, are numerous oval cysts containing *Cysticerci*. *Hunterian.*

Subseries 3. DISEASES OF THE VALVES.

Atrophy : 2973.

Inflammation of the Valves :—

Aortic, Acute : 2974-75, 2977, 3012. See also Ulcerative Endocarditis.

Mitral, Acute : 2917, 2922, 2971, 2974-75, 3030, 3044.

Aortic, Chronic : 2922, 2924, 2952-53, 2955, 2977 to 2987, 2991-92, 2994, 3001 to 3010, 3015 to 3018, 3023, 3025 to 3027, 3029 to 3031, 3035 to 3038, 3040-41, 3043, 3047.

Mitral, Chronic : 2952-53, 2955, 2976, 2988 to 3010, 3013, 3015, 3017, 3019 to 3021, 3030, 3036.

Pulmonary, Acute : 3028.

Pulmonary, Chronic : 2958, 3009 to 3011.

Tricuspid, Acute : 2993.

Tricuspid, Chronic : 2971, 2994, 2995, 3009 to 3011, 3017.

Contraction of Aortic Valves : 3001, 3007, 3037-38, 3040, 3047-48.

„ of Mitral Valves : 2976, 2988 to 2997, 3003, 3007 to 3009.

„ of Pulmonary Valves : 2958, 3009.

„ of Tricuspid Valves : 2995.

Obstruction by Inflammatory Bands : 2987, 3018.

Dilatation of Mitral : 2979.

Retroversion of Valves : 2924, 2977, 2986, 3004, 3022, 3031.

Calcareous Changes : 2936, 2977 to 2980, 2985 to 2987, 2999 to 3003, 3005, 3023, 3035, 3044 to 3046, 3048.

Ulcerative or Fungating Endocarditis : 3012 to 3029.

Diseases of Valves due to Injury ? : 3030-31.

Diseases due to Malformations : 3035 to 3048.

Supernumerary Valves : 3014.

Deficiency or Fusion of Valves : 3035 to 3048.

Patent Foramen Ovale : 2937, 2957, 3011.

Aneurism of Operculum of Foramen Ovale : 2940.

„ of Sinuses of Valsalva : 2979, 2983, 2987, 3017, 3044.

„ of Pulmonary Artery : 3028.

Aortic disease consequent upon Atheroma of Aorta : 2981 to 2983.

Atrophy.

2973. Part of an aorta, with its valves, one of which is reduced to an eighth of an inch in depth by the removal of all its free border. The remains of the valve are thin and nearly transparent ; its edge also is smooth. The other valves

are extremely thin, and the walls of the aorta are rather more than usually dilated behind them.

There is such a complete absence of thickening in this specimen, that it must be looked upon as a case of atrophy of the valves.

Inflammation of the Valves.

(Vegetations, Thickening, and Calcareous Degeneration.)

2974. Portion of the base of a heart, with large coarsely granulated masses of brownish-yellow lymph firmly adherent to the mitral, and one of the aortic, valves. The mass on the mitral valves extends down the tendinous cords to one of the fleshy columns; that on the aortic valve has a somewhat conical form, and is half an inch in length; its apex projects quite across the orifice of the aorta. *Hunterian.*

2975. Portion of the left ventricle of a heart, with the aortic and mitral valves. On the ventricular surfaces of all the valves, and on the tendinous cords, are numerous firmly adherent portions of lymph, of a brownish-yellow colour.

From the Museum of George Langstaff, Esq.

2976. A heart, exhibiting dilatation of the left auricle, with opaque white thickening of its lining membrane, and masses of lymph deposited on the auricular surface of the mitral valves and on its tendinous cords. The mitral orifice is small, and the ventricle is rather dilated.

Presented by Sir Anthony Carlisle.

2977. Aortic valves, very much thickened, and with their free borders recurved. On one of them there is a large irregular mass of firmly adhering brownish lymph, like that in the preceding specimens, but containing earthy matter. Smaller masses of a similar kind are scattered on the ventricular surfaces of both the other valves.

Presented by William Norris, Esq.

2978. A portion of an aorta, showing the aortic valves affected with extensive calcareous deposit.

Presented by Dr. G. Duncan Gibb, 1868.

2979. A heart, showing extreme disease of the aortic valves. One of the valves has a large spiculated mass of calcareous matter upon it, and the other valves are small and thick. There is also a small aneurism of one of the sinuses of Valsalva. The ventricle has become dilated as a consequence of the aortic disease, and the mitral orifice is stretched and dilated. The right ventricle and valves are healthy.

From a man, aged 21, at Victoria Park Hospital.

Presented by Dr. Peacock, 1876.

2980. The commencement of an aorta, dried, and exhibiting numerous small granular deposits of calcareous matter in the substance of the valves, together with opaque spots in them and in the adjacent endocardium.

From the Museum of Sir A. P. Cooper.

- 2980 A. The commencement of an aorta, with two of the valves, dried, and exhibiting small rough nodules of calcareous matter in them, and an opaque white granular deposit in the artery and the adjacent pericardium.

From a patient aged 72.

From the Museum of Sir A. P. Cooper.

2981. A heart and part of the aorta, with extensive aortic disease. The surface of the artery above the valves is irregular, altered in colour and dilated from the presence of inflammatory products. The aortic valves are incompetent, and the heart has undergone considerable hypertrophy and dilatation.

From a well-nourished young man who had been for some years a cavalry-soldier in India. He was invalided for heart-disease, and was under treatment for endocarditis with a loud diastolic

bruit in the præcordial region. Subsequently he had an attack of acute rheumatism, the first he had had, which lasted a fortnight. Three weeks afterwards, whilst drinking in a public-house, he fainted, and died immediately. He had indulged to excess in spirit-drinking.

Presented by Dr. E. Goddard, 1873.

2982. A heart, which is hypertrophied and dilated from disease of the valves and of the adjacent aorta. As in the preceding specimen, there is atheromatous disease and dilatation of the artery above the valves, and the valves are thickened at their edges. The muscular wall looks healthy.

From a man aged 35, a player on the cornet-à-piston. He was discharged from the army in India for disease of the heart, and he died in the Highgate Infirmary.

Presented by Dr. Lediard, 1874.

2983. The first part of an aorta, showing dilatation of its orifice and the sinuses of Valsalva, with secondary disease of the valves, the edges of which are all much thickened. The aorta is exceedingly atheromatous, thin, and dilated. The posterior sinus forms a large sac.

From a man aged 55, who had been subject to dyspnoea for three or four winters, and had had several attacks of rheumatic fever at intervals.

Presented by Dr. Peacock, 1876.

2984. Portion of a left ventricle, and of an aorta with its valves. The valves are uniformly thickened, opaque, and somewhat corrugated. On two of them a narrow, smooth, and thin prominent ridge, apparently formed by their thickened substance, extends across their ventricular surface, just below their free borders. The lining membrane of the ventricle is thickened and opaque. *Hunterian.*

The specimen is represented in Baillie's 'Morbid Anatomy,' fasc. i. pl. 2. f. 1.

2985. The valves of an aorta, slightly and irregularly thickened and opaque, and containing small masses of earthy matter.

Two of them are united along their adjacent half-edges, and two have small wart-like masses of yellowish lymph attached near their free borders. *Hunterian.*

2986. Parts of a left ventricle and aorta, with the aortic valves. The valves are all much thickened, diminished by uniform contraction to nearly half their natural width, recurved at their thickened borders, and adherent to each other at their adjacent angles. Earthy matter is also deposited in them, and in the adjacent thickened and opaque portion of the endocardium.

The patient, a man 31 years old, had cough, dyspnœa, palpitation of the heart, and irregularity of the pulse, for nearly a year. Shortly before his death he had hæmoptysis.

Extensive effusion of blood was found in one of the lobes of the left lung, and copious serous effusions in the pleuræ and pericardium. The walls of the left ventricle were very thin, its texture soft, its cavity large. The mitral valves were healthy.

From the Museum of George Langstaff, Esq.

The specimen is represented in Mr. Hodgson's 'Engravings intended to illustrate some of the Diseases of the Arteries,' pl. 1. fig. 6 (London, 4to, 1815).

- 2986 A. An aortic orifice, which has only two cusps, or of which two of the cusps have become adherent by disease. There is a median slit-like opening, the cusps are much thickened, and in that on the observer's right is a large mass of calcareous matter.

Presented by Richard F. Power, Esq., 1877.

2987. Portion of a heart, showing disease of the aortic valves, and obstruction of the aortic orifice by a band of false membrane extending across it. The valves are much thickened and one of them is perforated by ulceration. The band is composed of fibro-calcareous matter; it stretches from the base of the left anterior valve backwards to the inner part of the base of the mitral. Above the valves there are two small aneurisms of the sinuses of Valsalva.

From a waterman aged 57, admitted into St. Thomas's Hospital,

under Dr. Peacock, in 1857. He had been subject to rheumatic attacks for many years, and had been seriously ill for twelve months with cough, expectoration, palpitation, and dyspnœa. A loud systolic murmur was audible over the whole præcordial region, and was heard most intensely at the right side of the upper part of the sternum at the level of the third costal cartilage, but there was no distinct diastolic murmur. The pulse was collapsing; the liver enlarged; the lower extremities cedematous; and the skin covered by patches of purpura. (See Trans. Path. Soc. vol. ix. p. 184.)

Presented by Dr. Peacock, 1876.

Contraction of the Mitral Valves (Stenosis).

2988. Portion of the left side of a heart, with the mitral and aortic valves. The free borders of the mitral valves are round, thick, opaque, and rigid; and the orifice between the auricle and ventricle is contracted into the form of a narrow crescent. The rest of the valves are thickened, but less than are the borders. The tendinous cords are thickened, shortened, rigid, and opaque. The same opaque thickening and induration extends from the mitral valves over that part of the lining membrane of the ventricle which is between it and the aortic valves. These valves have opaque spots, and there is a ring of fatty and earthy matter in the coats of the aorta, at the level of the upper margins of the valves. *Hunterian.*

2989. Portion of the left ventricle of a heart, showing thickening of the chordæ tendineæ and mitral valves.

From a Dissection subject, 1865.

2990. A transverse section of a heart, showing contraction of the mitral valves, resulting from chronic endocarditis. The pericardium is adherent, and the muscular wall looks pale and fibrous, particularly beneath the endocardium.

The thickened and dilated left auricle has been opened to show the thickening of its endocardium and the diminished orifice of the mitral valve. The other valves are healthy.

Presented by Francis Kiernan, Esq., 1871.

2991. A transverse section of a heart, in which the mitral valves are thickened and their orifice reduced in size. The aortic valves also are thickened, and there is a slight fibrous change in the ventricular wall. In this instance the left auricle is neither dilated nor hypertrophied, but both ventricles are hypertrophied.

From a woman, aged 21. For two years she had had cough and some expectoration. In December 1872 she had swollen feet, her urine was scanty and albuminous, and she died of acute Bright's disease. A præsystolic murmur was heard during life.

At the post-mortem examination recent vegetations fringed both the aortic and mitral valves. The kidneys were small and mottled, being affected with acute supervening on chronic inflammation.

Presented by Dr. Goodhart, 1873.

2992. A heart, with extreme contraction of the mitral valves. The chordæ tendineæ and the edges of the flaps are thickened, contracted, and fused together, so as to reduce the orifice considerably. The aortic valves are also thickened. The heart is enlarged, but more so on the right side than on the left. The left auricle has a very dilated auricular appendix, distended with solidified and laminated clot.

From a man, 36 years of age, who had laboured under cardiac disease for three years. For eighteen months before his death he suffered from left hemiplegia, and he was subject to giddiness and partial loss of sight. The cardiac impulse was perceptible over an unusual extent of the præcordial region; the dulness on percussion exceeded its normal limits, and a loud rasping murmur was heard with the systole of the heart, most intense two inches below and to the left of the nipple. The pulse was quiet, feeble, and irregular. After death some old lymph was found on the external surface of the right cerebral hemisphere, and from this point a softened portion surrounded by indurated cerebral substance was traced to the external part of the right corpus striatum and thalamus opticus. There was also recent softening of the right lobe of the cerebellum. The heart weighed $17\frac{1}{2}$ oz.

For other details and references to cases of auricular aneurism see Edinb. Med. & Surg. Journal, 1846, vol. ii. p. 261.

Presented by Dr. Peacock, 1876.

2993. The heart of a child, with extreme thickening and contraction of the mitral valves. The left auricle and its

appendix are hypertrophied, not in this instance dilated; the right auricle and ventricle are both dilated and hypertrophied, and the left ventricle is small. The tricuspid valves are both thickened and fringed with some small vegetations. The other valves are healthy, and the pericardium also.

From a girl aged 10, who died hemiplegic. She had a distinct double murmur at the apex.

Presented by Dr. Peacock, 1876.

2994. A heart, showing considerable thickening of the mitral valves and narrowing of the auriculo-ventricular orifice. The aortic valves and the tricuspid are somewhat thickened, and both ventricles are enlarged and dilated. The heart weighed $20\frac{1}{2}$ oz. The aorta was healthy.

From a groom, aged 19, of temperate habits. He had suffered from rheumatic fever, and had been liable to cough and palpitation for a considerable period. He had urgent dyspnoea, which he stated had existed for a week; his lips, nose, and extremities were cold. The præcordial region was prominent, and the regional dulness rather large. The heart's action was irregular, and a systolic murmur audible most distinctly below the nipple and thence towards the left axilla, was feebly audible at the lower angle of the left scapula. He improved temporarily under treatment, but before long the dyspnoea increased. The liver became enlarged, the urine albuminous, and he died exhausted. At the post-mortem, in addition to the morbid appearances of the heart, there were signs of recent double pleurisy and pulmonary apoplexy. (Path. Soc. Trans. vol. viii. p. 127.)

Presented by Dr. Peacock, 1876.

2995. A heart, with an aneurism of the left auricle. The mitral and tricuspid valves are thickened and opaque; the orifices from the auricles to the ventricles are contracted, and both the auricles are generally dilated. A portion of the anterior wall of the left auricle, including the appendix, is further dilated into an oval sac, which extends in front of the commencement of the aorta to the left border of the pulmonary artery. The walls of the sac are nearly a line in thickness, and contain a layer of muscular fibres; its cavity is full of laminated coagula, and it communicates with the auricle by a large

smoothly bordered oval aperture. The opposed surfaces of the pericardium were everywhere closely adherent; parts of the adhesions were ossified. The whole heart is enlarged.

The patient was 54 years old, and had palpitation and dyspnoea for four years before his death. During the last six months of his life these symptoms were very severe, his pulse was usually 100 in the minute, and always irregular, his lips were blue, he had a distressing cough, and his feet and legs were œdematous. Bleeding occasionally relieved him, but he became very emaciated, and died rather suddenly.

From the Museum of George Langstaff, Esq.

2996. A heart showing extreme contraction of the mitral valves with ante-mortem coagula in the cavity of the left auricle and that of its appendix. The heart is considerably enlarged and the left ventricle dilated.

The cardiac disease is said to have followed rheumatic fever three years before.

Presented by Dr. Peacock, 1876.

2997. A portion of the left side of a heart. In the substance of one of the mitral valves there is a large mass of calcareous matter, with a rough uneven surface. The rest of the valves, and the tendinous cords, are thick, opaque, and nearly rigid, and the orifice is contracted.

Hunterian.

2998. A heart, in which the left auricle is very greatly dilated. All the other cavities are large. The mitral valves are thickened and more opaque than natural; they probably closed inefficiently. The left auriculo-ventricular orifice is very large. All the other valves are quite normal. The apex of the heart was adherent to the diaphragm, and about a pint of straw-coloured fluid was found in the pericardium.

From a man who had suffered for eight years from rheumatism, attended with palpitation, difficulty of breathing, and dropsy. For the last four years of his life he could never lie down in bed for more than three quarters of an hour at one time. His death occurred suddenly, when reaching something from a height. He

is said to have derived much benefit from digitalis, which he took in large quantities and for a very long period.

Presented by John Pranker, Esq., 1860.

2999. A left auriculo-ventricular orifice, in the larger valve of which is deposited a considerable mass of hard, rough, dark-coloured substance, containing a large quantity of earthy matter. The lining membrane on the auricular side of the valve has given way in several places, exposing the rough granulated surface of the deposit; in other places it is so thin that the dark colour is seen through it.

From a man 38 years of age, admitted into the Naval Hospital for intense occipital pain, for which he had been frequently and freely bled without obtaining much relief. He died the day after his admittance; and, on post-mortem examination, no disease was found in the brain or its membranes. The heart was large and flabby, and the pericardium adherent.

Presented by Sir Stephen L. Hammick.

3000. A mitral orifice, with the adjacent aorta and the aortic orifice, dissected away from its surroundings to show a ring of calcareous vegetations on its external flap.

Presented by Dr. Thurnam, 1871.

3001. The mitral and aortic valves of a heart, thickened, rigid, opaque, and containing large masses of earthy matter. All the aortic valves are adherent to one another near their angles of attachment, and the orifice between the left ventricle and the aorta is contracted to a circle of about four lines in diameter, and this not in the centre, but near the wall of the artery. The earthy matter forms hard granular projections on the surface of the valves, and is in some parts exposed by the destruction of the lining membrane over it.

Hunterian.

3002. Portion of a heart, with the mitral and aortic valves. Earthy matter is deposited in coarsely granular masses and bars, which project upon the ventricular surface of the mitral and the arterial surface of the aortic valves. The

largest mass forms a thick ridge extending across the mitral valve. All the rest of the texture of the valves, and the adjacent part of the endocardium, are thick and hard.

Hunterian.

3003. Part of a heart, showing thickening and contraction of the mitral and a similar change in the aortic valves. The mitral contains a good deal of calcareous matter.

A butler, aged 17, had an attack of rheumatic fever when four years old, and four or five attacks afterwards. He had also suffered three times from chorea, and had never been free from cardiac symptoms during his recollection, though he was worse the few months preceding his death. He had shortness of breath, palpitation, cough, and lividity. The pulse was small and irregular. The præcordial dulness much increased, and there was a low systolic murmur at the apex of the heart, in the axilla, and at the lower angle of the left scapula. He had several convulsive fits before death, and was after them morose and torpid.

The heart weighed $17\frac{1}{2}$ oz. The pericardium was firmly adherent by old adhesions. (Path. Soc. Trans. vol. xxiii. p. 59.)

Presented by Dr. Peacock, 1876.

3004. Mitral and aortic valves, with the adjacent parts. The mitral valves are thickened and opaque, and their borders, more thickened than any other part, appear rigid. The tendinous cords and the summits of the fleshy columns are similarly thickened, opaque, tough, and white; the aortic valves are shrivelled, and their margins are curved backwards and irregularly thickened.

“Heart Diseased: Mr. Bulstrode’s Case.

“When a boy he never could use the same exercise that the other boys did: he could not run upstairs without being out of breath. He had almost throughout his life an irregular pulse. Upon the least increase of exercise he had a palpitation at his heart, which was often so strong as to be heard by those who were near him, and he became soon fatigued, which was by his acquaintance supposed to be owing to the want of spirit or courage. With all this he grew to be a well-formed and properly sized man, but he still retained his complaints.

“He of late years [about the age of thirty] took to violent exercise, such as hunting; and often in the chase he would be taken so ill with palpitations, and almost a total suffocation, that



he was obliged to stop his horse and be held upon the saddle. Some of these fits continued several days before he recovered his usual strength; at such times he became black in the face. Sometimes an universal yellowness took place; and often he could not lie down in his bed, but was obliged to sit up for breath.

"All these symptoms gradually increased upon him, and at times, without any violent exercise, he would feel as if dying, and used to express himself so: but as the cause of these feelings did not appear to his friends, they rather treated him slightly. At last anxiety of mind only would bring on these feelings, palpitations and suffocations in some degree.

"In the winter of 1780 and 1781 he hunted very severely, and also caught a cold; both of which brought on the above-mentioned complaints with greater violence than ever. He consulted Dr. Heberden and Sir George Baker: the palpitation, the difficulty of breathing, the great oppression, with the blackness in the face (I suppose) they thought either arose from spasm, or was nervous, for they ordered cordials, such as spirit of lavender, wine, &c. I was sent for on the same day to give a name to the disease. Upon inquiry into all the symptoms of the disease my opinion was that there was something very wrong about the heart, namely about the source of the circulation, that the blood did not flow freely through the lungs; that a stagnation to the blood in any one part about the heart would produce in some degree suffocation, which was the cause of the darkness of the face at those times. That the means to be practised were rest, bleed gently, eat moderately, keep the body open, and the mind easy; and as he had got the better of the former attacks (although not so violent) I saw no absolute reason why he should not get the better of the present.

"Eight ounces of blood were taken away from him that day, which relieved him. The symptoms still continuing, although not so violent, I saw him once more. He lost about four or five ounces more, which also relieved him, but still he did not get materially better, and at last, as an addition to the above, he became yellow, and his legs began to swell with water, and all his symptoms gradually increased.

"He was now attended by Sir Richard Jebb; he was blistered on the legs, which threatened a mortification there: a caustic was applied to the pit of the stomach (I suppose for a pain there). What medicines he took I don't know. Nature was at last worn out, and he died. I solicited to open the body, and was allowed.

"On opening the belly there was a very small quantity of bloody yellowish serum. Every viscus appeared to be sound. The gall-bladder was pretty full of bile, which was thick, but not ropy, as if the thinner parts had been strained off. The ducts were clear both to and from the bladder.

"Upon opening the chest the lungs did not collapse, being a good deal cedematous; otherwise appearing sound. A little bloody serum in both sides of the chest. The heart was very large, and very full of blood. Upon opening the right side of the heart I

found nothing uncommon either in the heart or [pulmonary] arteries. Upon opening the left side I found the valves of the aorta shrivelled up, thicker, and harder in consistence than common.

“This diseased structure of the valves accounts for every one of what may be called his original symptoms, and was such as rendered them of very little use: therefore the blood must have flowed back into the cavity of the ventricle again at every systole of the artery. Whether this shrivelled appearance of the valves of the aorta was a natural formation, or a disease, is not easily ascertained; but if it was disease it must have begun early in life, from his symptoms having begun early. It may be difficult to account for the increased size of the heart, whether it could be mechanical, as the blood would be thrown back at every systole of the aorta and diastole of the heart? or whether it arose from a particular affection of that viscus? The first idea is the most natural, although it is not absolutely necessary that the cause should be mechanical for such an effect to take place, because we see every day enlarged hearts, where the symptoms have been somewhat similar, and yet no visible mechanical cause existed. It is easily to be conceived, first, that the circulation could not be carried on so regularly and perfectly as common; secondly, that a stoppage to the motion of the blood in either arteries or veins, but much more that of retrograde motion of the blood any where, must produce a stagnation, and which will be according to the quantity of blood passing that way; thirdly, that if it was only in a branch of an artery or vein, the stagnation would probably be only partial; but when in an artery or veins of the whole body, as the aorta or venæ cavæ, then it must be pretty universal; and as the retrograde motion in the blood began with the aorta, we can easily trace the effects of this retrograde motion, which effects would only be a stagnation of the blood beyond the left ventricle, first in the left auricle, then the pulmonary veins, then the pulmonary arteries, next the right auricle, and in all the veins of the body; producing that darkness in the face, &c., which stagnation will extend to the arteries of the lungs, to the right side of the heart, then through the whole veins of the body.”—*Hunterian MS.: Cases and Dissections*, No. 39.

The above case was published, with some slight additions and improvements, by Mr. Hunter in his ‘*Treatise on the Blood*,’ &c. (Works, vol. iii. p. 80). The first part is also contained in the *Hunterian MS. Cases in Surgery*, p. 326; and the latter portion, with the examination after death, in the *MS. Dissections of Morbid Bodies*, No. 184.

3005. Part of the left side of a heart, with the arch of the aorta. Both the mitral and aortic valves are slightly thickened, and in a considerable extent opaque-white. The mitral valves also exhibit small deposits of earthy substance in their

thickened texture. The left ventricle is thickened ; the aorta is rather dilated ; and just beyond the origins of the great brachio-cephalic trunks there are a few plates of earthy matter in its internal coat. *Hunterian.*

- 3006.** A heart, of which the left ventricle is considerably dilated. Its endocardium, especially towards the aortic orifice, is thickened, opaque, with much formation of fibrous tissue, and has some flocculent lymph adhering to its surface. The aortic valves are very much thickened, and somewhat corrugated. The mitral valves are also thickened.

Presented by Sir Stephen L. Hammick.

- 3007.** The heart of a child, showing the effects upon the valves of inflammation during attacks of acute rheumatism. The aortic valves are much thickened and contracted, and were quite incompetent. They also presented considerable obstruction to the egress of blood when in their natural position. The mitral valves are thickened, indurated, and contracted, and the auricular appendix rigid and hypertrophied. The left auricle is not dilated. The left ventricle is considerably hypertrophied and dilated. There is one old adhesion on the pericardium, but no evidence of any general pericarditis ; and there are slight thickening and adhesion of the pulmonary valves.

From a girl of 12 years, who had had repeated attacks of acute rheumatism, the first when she was three years old.

Presented by Dr. Peacock, 1876.

- 3008.** A heart, showing the effects of old endocarditis on the aortic and the mitral valves. The aortic valves are very small and the edges thickened, producing complete incompetence, and below them in the course of the regurgitant stream the endocardium of the ventricular septum is rugose and thickened. The mitral valves are much thickened and contracted, so are their tendinous cords, and on their auri-

cular surface is a mass of calcareous matter. The left auricle is thick ; so also is the ventricle. The several cavities are dilated.

Presented by Dr. Peacock, 1876.

3009. A heart, in which both the auriculo-ventricular orifices are contracted by thickening and induration of the tricuspid and mitral valves, and by shortening of their tendinous cords. All the parts thus diseased are opaque-white, hard, and tough. The pulmonary valves are healthy ; the aortic are slightly thickened and opaque. Both the auricles are exceedingly dilated, and their walls are hypertrophied ; the ventricles also are dilated, but to a less extent ; the walls of the right ventricle are thinner than is natural ; those of the left have about their usual thickness. The aorta appears small in comparison with the pulmonary artery and the heart.

The patient was a woman 33 years old, and had signs of disease of the heart and liver for five years. She had extreme dyspnoea, with blueness of the lips and face ; the heart's action was bounding, could be felt over a wide extent, and was generally irregular. She had jaundice, which was followed by ascites, for which it was necessary to tap her twice. At the last she had hæmoptysis, and died suddenly.

The lungs were found infiltrated, and compressed by large quantities of fluid in the chest. The pericardium contained two pints of fluid. The liver was very large, soft, and granulated.

From the Museum of George Langstaff, Esq.

3010. A heart, showing thickening of the pulmonary valves. It has produced contraction of their adjacent edges, and the orifice of the pulmonary artery is proportionately narrowed. The tricuspid valves, also, are much thickened and atheromatous, and the mitral have suffered, but to a less extent. The right ventricle is so thick that it almost equals the left. The pulmonary artery is, if anything, a little dilated, but not thickened. The heart weighed $8\frac{1}{2}$ oz.

From a thin undeveloped girl of 19, who had long suffered from cardiac and pulmonary disease. She had a systolic murmur over the apex of the heart, and a systolic and diastolic murmur at the base.

Presented by Dr. Semple, 1872.

- 3011.** A heart, showing disease of the pulmonary and tricuspid valves. As in the foregoing specimen, the edges of the pulmonary valves are thickened. The tricuspid valves are very thick, and the muscular wall of the right ventricle also. The valves on the left side are healthy. The foramen ovale is widely open. The heart is enlarged in all directions, and the pericardium has traces of old adhesions.

Presented by Dr. Goodhart, 1874.

Ulcerative Disease of the Valves.

- 3012.** Portion of an aorta, with its valves. The aorta is dilated above and behind the valves, and there are a few small deposits of earthy matter beneath the surface of its lining membrane. The valves are very wide, thin, and, for the most part, transparent. Two of them are perforated by large ulcers of a nearly circular form, whose edges are thickened with adherent lymph. The ulceration extends behind one of the valves to the adjacent part of the artery.

The specimen was probably taken from a patient whose case is added to the description of No. 3338.

Presented by Sir Everard Home.

- 3013.** A heart, showing general enlargement of both ventricles, and considerable dilatation of the left. The mitral valves and their tendinous cords are thickened and calcareous, one of them being broken through, so that a large portion of the free fold can be turned back. The broken end is fimbriated by a mass of vegetations. The mitral orifice is smaller than is natural. The valves upon the right side are healthy. The heart weighed nearly 20 oz., and the pericardium shows white patches upon its anterior surface.

A milkman aged 41, with good family-history, had an attack of rheumatic fever when 15 years old. He was ill three months, and he had since then been subject to pains in his limbs. His last illness commenced with pain in his right side six months

before death, and he had also shortness of breath, palpitation, and cardiac distress.

He was admitted with jaundice and enlarged liver. The cardiac dulness was enlarged transversely, the impulse was diffused and undulating. A systolic murmur was audible over the whole of the præcordia; most loudly at the apex of the heart, and in the axilla and behind. Latterly a slight presystolic bruit was audible, and a systolic thrill was felt at the apex. He gradually died. (See 'Lancet,' vol. i. p. 280, 1868.)

Presented by Dr. Peacock, 1876.

3014. A heart, of which both ventricles, but especially the left, are greatly dilated; their walls are thickened, but not in a degree proportionate to the increase in the size of the cavities. The mitral, tricuspid, and pulmonary valves are healthy. The aortic valves are four in number, but a large part of the supernumerary valve has been removed. They are all thickened, opaque, and slightly contracted, and have shreddy fibrinous material attached about the centres of their ventricular surfaces. Two of them, also, are deeply ulcerated—one presenting a small aperture surrounded by deposits of lymph in its centre, the other having lost a large portion of its free border. The aorta appears very small in proportion to the cavity of the left ventricle, but its texture is healthy.

From the Museum of George Langstaff, Esq.

3015. Part of a heart, including the mitral and aortic valves, which are much thickened and opaque. The three aortic valves have deep ulcers, with ragged shreddy margins, situated in one at the free border, in the other two near the centre of their convex surface. In the middle of the anterior flap of the mitral orifice is an irregular, transverse, ulcerated opening, about four lines in length.

From a seaman, 30 years of age, who, during the two years preceding his death, had been subject to violent palpitation of the heart, irregularity of pulse, sense of suffocation, frequent faintings, and severe pain shooting through the thorax to the spine.

Presented by Sir Stephen L. Hammick.

3016. Part of a heart, including the left ventricle and the mitral, pulmonary, and aortic valves. The ventricle is dilated, and its walls are in about a proportionate degree hypertrophied, but their texture appears pale and flabby. The mitral and pulmonary valves are healthy. The aortic valves are thickened and opaque : long fibrinous growths are attached around the corpora Arantii ; and in the centres of two of the valves there are circular ulcerated apertures, the margins of which are irregular and thickly covered with lymph.

From a man 74 years old, who had dyspnœa and palpitation of the heart for many years. These symptoms increased greatly during the last six months of his life. The pulse was always irregular and strong, his lips were livid, the dyspnœa was frequently aggravated, and he presented many of the signs of angina pectoris. Towards the close of life his legs became œdematous. His death was sudden.

Ten ounces of fluid were found in the pericardium, four pints in the left pleura, and two and a half in the right. The lungs were emphysematous. The coronary arteries were healthy. The liver was granulated.

From the Museum of George Langstaff, Esq.

3017. A heart, in which there is ulceration of the aortic valves with aneurismal bulging of the aorta towards the left auricle. The aortic valves are thickened from old disease, and the posterior and left anterior valves are combined and covered by a mass of coagulum and irregular vegetations. Behind this, in the corresponding sinuses of Valsalva, is a large aneurismal sac which bulges towards the auricle, and opens into it at a part marked by a bristle. The mitral valves are much thickened, and the upper part of the aortic portion is defaced by contact with the diseased aortic valves. The tricuspid valves were slightly thickened. The ventricle is dilated ; and there is a thin layer of lymph upon the surface of the pericardium. The heart weighed 18 oz.

The patient, a tradesman in moderately easy circumstances, had rheumatic fever sixteen years before death, unaccompanied by any heart affection. He was very abstemious, and had suffered for about three months with symptoms resembling ague. He took to his bed about a month before his death, and at that time no disease of his viscera could be detected. Quinine and arsenic failed to relieve the ague. Sixteen days before death he had con-

siderable præcordial oppression, and now a double aortic murmur was heard. This became rapidly louder; and a few days later there was a very considerable increase of præcordial dulness. He died not long after with a violent attack of heart-spasm, and the subsequent exhaustion it produced.

The case is fully recorded by Mr. Buxton Shillito in the Path. Soc. Trans. vol. ix. p. 79.

Presented by Dr. Peacock, 1876.

- 3017 A.** A portion of a heart, with the cavity of the left ventricle and the aortic orifice exposed to view. The aortic valves and the ventricular surface of the aortic portion of the mitral orifice are covered with numerous pendulous, rounded and foliaceous papillary vegetations. The auricular endocardium is also affected. The anterior aortic valve has been almost destroyed by ulceration; immediately above it there is an irregular ulceration of the aorta, about half an inch in diameter, which has penetrated all the coats of the vessel.

From a man, aged 30, who had an attack of rheumatic fever fifteen years before death, and ever afterwards suffered with dyspnoea and palpitation on exertion. About a month before death anasarca and vertigo came on. Death was preceded by delirium and purpura. The autopsy showed old infarcts in the spleen, and blood-clot with fibrin in the pericardium. (See 'Lancet,' vol. ii. p. 185, 1883.)

Presented by Dr. Leslie Phillips, 1883.

- 3017 B.** A heart, of which the aortic valves are diseased. They are much thickened by the growth of minute vegetations, and are deeply destroyed at their free edges. The left ventricle is dilated, but the walls are of the natural thickness.

From the same patient as No. 3241 A, with which an account of the case is given.

Presented by Robert W. Parker, Esq., 1884.

- 3018.** A heart, in which ulceration of the endocardium below the aortic valves has caused perforation of the right auricle. The aperture in the right auricle is about an eighth of an inch in diameter, has everted edges, and is situated just above the auriculo-ventricular orifice behind the aortic valves. The aortic valves are thickened from old inflam-

mation, and the posterior and left anterior valves are completely blended. There is slight aneurismal dilatation of these two valves. The heart is large, the ventricle dilated, and the mitral orifice is considerably stretched. On the right side the valves are healthy ; but there is an abnormal shortening of some of the muscular trabeculæ of the ventricle, leading to the production of a septum at the junction of the sinus with the infundibular portion of the ventricle. The latter leads from the ventricle to the tricuspid orifice by an oval aperture.

From a girl, aged 19, who died at St. Thomas's Hospital with a low form of rheumatic fever, and with persistent high temperature.

Presented by Dr. Peacock, 1876.

3019. A heart exhibiting complete destruction of the chordæ tendineæ of one of the fleshy columns of the left ventricle, so that the free fold of the mitral orifice is left loose and allowed of free regurgitation from the ventricle into the auricle. The edge of one of the valves is thickened and indurated from old disease, but around the now separated attachment of the chordæ tendineæ were large and soft vegetations, indicative of some recent ulcerative process. The ventricle is dilated, but not much hypertrophied.

From a girl, aged 16, a bookfolder. Fifteen months before her death she felt pain and had swelling in her limbs and joints. Soon after, she began to suffer from palpitation. On admission to St. Thomas's Hospital she had febrile symptoms and pains in the limbs, a systolic apex-murmur, and increased præcordial dullness. She had inflammation of the veins of the leg while in the Hospital. (Path. Soc. Trans. vol. vii. p. 90, 1855.)

Presented by Dr. Peacock, 1876.

3020. A heart which is hypertrophied and dilated, showing a thick mass of vegetations on the mitral valves and ulceration of several of the chordæ tendineæ, so that the aortic flap has become loose. The auricular wall has vegetations upon its posterior part, in the usual situation. The aortic valves are thickened ; the right side is healthy. The heart is large, and weighed $15\frac{1}{2}$ oz. in the fresh state.

From a woman, aged 27. Seven years before death she had a

severe attack of rheumatic fever, and ever afterwards suffered from difficulty of breathing and palpitation. Her last attack was of seven weeks' duration, and there was a loud and somewhat creaky systolic murmur heard at the apex of the heart. (Path. Soc. Trans. vol. xviii. p. 38.)

Presented by Dr. Peacock, 1876.

3021. A heart showing rupture of one of the chordæ tendineæ of the mitral valves. The stump of the cord has a bulbous end, from vegetations upon it, and appears to have ulcerated, though leaving its flap unaltered. The edges of the mitral valves are thickened, and the endocardium of the posterior wall of the left auricle is roughened by vegetations. The pericardium is thickened and white.

From a female, 21 years of age. She had been an inmate of the Victoria Park Hospital in 1861, suffering from symptoms of mitral valvular disease following on rheumatic fever eighteen months before. She recovered sufficiently to go about her work for four years, and then got worse again. She was on her way to the Hospital for readmission when she became violently sick, and collapsed and died in a few hours. ('Valvular Disease of the Heart,' p. 45, Case 5.)*

Presented by Dr. Peacock, 1876.

3022. A heart of large size, weighing 21 oz. The ascending aorta and the aortic orifice are dilated, and the edge of the posterior semilunar valve is retroverted and hangs loosely into the ventricle, allowing of free regurgitation from the aorta into the ventricle. Some of the chordæ tendineæ of the mitral valves have also given way; so that the angle of a valve is unattached, and allowed of free regurgitation from the ventricle into the left auricle. There are vegetations both on the edge of the retroverted aortic valve and upon the mitral. The left ventricle is considerably hypertrophied and dilated, and the left auricle and right ventricle and auricle are enlarged. The aorta, though dilated, is not otherwise materially diseased. The pericardium is healthy.

From a fireman of a steamboat, aged 43. He had been ill for

* The work referred to here and in subsequent descriptions is that by Dr. Thomas B. Peacock, 'On some of the causes and effects of Valvular Disease of the Heart': London, 1865.

four months, and ascribed his attack to cold. He had never had rheumatic fever or any other serious illness or any severe accident before his seizure. He complained of great dyspnoea, cough, and pain across the lower part of the chest. He had general dropsy and albuminous urine; the pulse was jarring and regurgitant; the cardiac dulness was considerably increased in extent; and there was a marked musical diastolic murmur at the base of the heart, with a systolic murmur of entirely different note towards the left axilla and at the lower angle of the left scapula. He had purpura, epistaxis, melæna, and hæmaturia. ('Valvular Disease of the Heart,' p. 51, Case 2.)

Presented by Dr. Peacock, 1876.

- 3023.** Part of an aorta with its attached valves, showing disease of the valves, in part recent and in part due to some old affection, possibly malformation. All the valves are greatly thickened, indurated, and in places studded with cretaceous deposit. The contiguous sides of the left and posterior valves are adherent throughout, and the left valve is in part united to the others. In the posterior valve two large ulcers are seen, with their edges studded with nodules of lymph. The proper aperture of the vessel, notwithstanding the rigidity of the valves, could be closed; but free regurgitation took place from the artery into the ventricle through the ulcerated apertures. The heart weighed 28 oz., and was hypertrophied and dilated. A mass of cretaceous matter adhered to one part of the endocardium. The auricles were much dilated.

From a boy of feeble mind, aged 18. He had never had rheumatism or any other serious disease, and was in his usual health when he went to see some houses which had been burnt down, where several persons perished; while there he was much excited by the description of the fire, was seized with a fit, and was never afterwards well. He suffered from palpitation and difficulty of breathing, and had the usual signs of obstructive and regurgitant aortic disease. He survived for three years, being subject to occasional attacks of epilepsy. (See 'Valvular Disease of the Heart,' p. 15, Case 4.)

Presented by Dr. Peacock, 1876.

- 3024.** A portion of the base of a heart, with the aortic and mitral valves. The left anterior valve of the aortic orifice is partially ulcerated away from its attachment. The flap

thus formed has a long pendent mass of clot and vegetation. Small deposits of lymph are seen on and between the other valves.

From the body of a man, 56 years of age.

Presented by Dr. Peacock, 1876.

3025. The base of a heart, of which the posterior valve of the aortic orifice is wholly destroyed. The fibrous membrane closing the undefended space at the base of the septum ventriculorum adjacent to it is also destroyed; the septum is thus almost perforated, the only separation between the cavity of the left and that of the right ventricle being the lining membrane of the latter. This is much altered, vascular, and so soft as readily to give way when handled. The perforation is surrounded by vegetations. A small portion of the lining membrane of the right auricle has been taken away to show the extent of the aperture. The edges of the other two valves are seen to be considerably thickened as the result of old disease. The muscular walls of the ventricles are fatty.

From a man, aged 32, who had rheumatic fever ten or twelve years before his death. He had led a very intemperate life, but had enjoyed good health till six or seven weeks before admission to Hospital, when he had a second seizure of pain and swelling of his ankles. He was admitted in a dying condition, delirious, semi-comatose, dropsical, and with urgent dyspnœa. The præcordial dulness extended beyond its natural limits, and a distinct purring thrill was felt there. A double murmur was heard at the base. Death occurred two or three days after his admission to the Royal Free Hospital. The heart weighed 16 oz. Some old lymph was found on the pericardium. The kidneys were in an advanced state of disease. (Path. Soc. Trans. vol. ii. p. 49.)

Presented by Dr. Peacock, 1876.

3026. Part of an aorta with the adjacent mitral valves, showing extreme disease of the right anterior and posterior aortic valves. The right valve is considerably expanded, and at its most dependent part is a large opening which allowed of free regurgitation. The posterior valve is not perforated,

but is fissured and roughened in a very peculiar way, and the aortic orifice is considerably diminished in size. The aorta has an irregular surface and appears thin.

The case is an illustration of disease originating by means of dilatation of the lower or ventricular portion of the orifice of the aorta. The heart was very large, and the left ventricle both dilated and hypertrophied. (See Peacock, 'Valvular Disease of the Heart,' p. 49 *et seq.*; Path. Soc. Trans. vol. iii. p. 288.)

Presented by Dr. Peacock, 1876.

3027. Portion of an aorta with its valves, of which two appear healthy; the other is thickened, rough, and perforated by a large irregular opening, around the margin of which nodular masses of lymph have been deposited.

From a man who died of phthisis pulmonalis, without having shown any marked symptoms of heart-affection.

Presented by Sir Stephen L. Hammick.

- 3027 A. A heart, of which the aortic valves are affected with ulcerative endocarditis. Two of the portions are united and covered with a mass of rough granulations, and a large ulcerated aperture exists near their attached surface. The greater part of the surface and free margin of the other portions is more thinly covered with a smoother layer of granulations. The mitral valves are unaffected, and the left ventricle is much dilated.

Presented by Dr. J. F. Goodhart, 1880.

3028. A heart, with a saccular aneurism springing from its anterior surface at the base of the pulmonary artery. The heart has been laid open by an incision from the front through the right and left ventricles. The aneurism occupies the side of the specimen to the observer's right; it is filled with clot, and a portion of its wall has been removed.

"The pericardium was adherent by a thick layer of fibrine,

which was of a deep red colour in some parts from free blood. When the pericardium was reflected an abnormal swelling, about the size of a small pullet's egg, was at once detected lying at the base and immediately in front of the pulmonary artery. It was more or less solid, and surrounded by an investing coat of deep purplish red. In this membrane there was a rent. The heart weighed over 12 oz. The right ventricle was dilated; and the auriculo-ventricular orifice sufficiently large to have permitted regurgitation. The pulmonic valves were eroded, and replaced in great part by granular vegetative growths. The sac of the aneurism, which was thin and formed from the anterior wall of the artery, was incompletely filled by firm fibrin. The wall of the pulmonary artery close by the middle sigmoid valve had become cloudy and opaque from inflammatory change. The left ventricle was dilated and hypertrophied, and attached to the central aortic valve was a vegetation about the size of a pea."

From a girl, aged 19, of dark complexion, irregular habits, and six months advanced in pregnancy. She had been exposed to all weathers and sudden changes of temperature. She denied ever having had syphilis. Four years before her death she had had a severe attack of acute rheumatism, but until a month of her admission she had been quite well. At this time dyspnoea came on; and when admitted there was considerable lividity and venous turgescence, and the præcordial dulness increased in all directions. The apex-beat was felt just below the sixth rib, and there was a systolic fremitus. A rough systolic grind was heard over the whole of the chest, and was most marked to the left of the sternum over the pulmonary valves. She died with acute pericarditis.

The case is recorded in the 'Transactions of the Pathological Society of London,' vol. xxvi. p. 28.

Presented by Dr. Dowse, 1875.

3029. Part of a left ventricle, with the aortic valves. Two of the valves appear healthy, except that their free margins are slightly thickened: the third valve is thickened and irregular, and one of its angles, together with the adjacent part of its border, is separated, as if by tearing, from its attachment at the orifice of the artery. The surface of this valve is spotted with adherent lymph, and a fibrinous coagulum, two inches long, is attached to it.

The patient, a woman 28 years old, died suddenly while sitting in her bed, six weeks after delivery. She had disease of the knee-joint, but appeared in good general health till the day before her death, when she expressed some fear that she should "lose her

milk," and the nurse thought her breathing was quicker than natural.

A further account of the case is given by Mr. Crisp, in his 'Treatise on the . . . Blood-vessels,' p. 88 (London, 1847).

Presented by Edwards Crisp, Esq.

Diseases due to Injury of the Valves.

3030. A heart, showing hypertrophy and dilatation of its walls, with disease of the aortic valves and the base of the aorta, and vegetations and thickening about the mitral valves. There is extreme atheromatous and calcareous change at the commencement of the aorta, and at the spot which is most advanced the adjacent angles of the left anterior and posterior valves are broken down. The edges of the valves are also considerably thickened. Below the gap thus left in the valvular ring is a spot in which the endocardium is roughened by the presence of lymph, probably produced by some vegetations now displaced.

From a sailor, aged 33. Ten months before admission he had left the West Coast of Africa, after suffering from endemic remittent fever. Shortly after sailing he was directed to go aloft, and ran up the shrouds racing another man. On reaching the crosstrees he was seized with severe pain in the region of the heart, became faint, and gasped as if dying. During the rest of the voyage he was unable to go aloft. He had never had any serious illness previously. He presented the usual symptoms and signs of obstructive and regurgitant aortic disease. He died rather suddenly eighteen months afterwards. The immediate cause of death was extravasation of blood upon the surface of the left hemisphere of the brain.

The case is recorded by Dr. Peacock in 'Valvular Disease of the Heart,' Case 2, p. 37, as an instance of disease following injury.

Presented by Dr. Peacock, 1876.

3031. A similar specimen. The heart is large, weighing 23 oz., the cavity of the left ventricle is dilated and its walls are hypertrophied. The left angle of the posterior semilunar valve was found to be torn from its attachment, so that it was quite loose and readily admitted of retroversion, allowing free regurgitation from the artery into the ventricle.

The valves are all considerably thickened, and the aorta above them, particularly in the line of the injured valve, is extensively diseased. (In the specimen as now exhibited, hardened for some time in spirit, there is no evident tearing of the valve or retroversion of its edge.)

The man was a dock-labourer, aged 36. He stated that he had been suddenly, while in good health, attacked with cardiac symptoms two months before. He had never had rheumatism or any other serious illness. When pulling with some other men at a sugar-hogshead, his hand slipped and struck him a severe blow on the left side of the chest, and he fell backwards. He immediately felt severe pain in the region of the heart and became faint, and in the evening his breathing became difficult. These symptoms subsided in a few days, but never entirely ceased, and he afterwards got worse till the time of his admission to the Hospital. He then had a double aortic murmur, with dropsy. He died about $3\frac{1}{2}$ months from the commencement of the attack. (See 'Valvular Disease of the Heart,' p. 37.)

Presented by Dr. Peacock, 1876.

Diseases of the Blood-vessels of the Heart.

3032. A heart, dried, and exhibiting the coronary arteries extensively ossified. In other respects it appears to have been healthy.

From a patient who had angina pectoris.

From the Museum of Sir A. P. Cooper.

3033. A heart, showing a sacculated aneurism of the coronary artery. It is situated on the anterior branch of the artery, one inch from the origin of the vessel and three quarters of an inch from the point at which it divided into its two primary branches. It is of nearly spherical form and has a diameter of $8\frac{1}{2}$ lines; externally it is covered by the pericardium and a layer of false membrane, and internally it is imbedded in the wall of the left ventricle. The cavity of the aneurism is filled with laminated coagula. The sac is entire and communicates with the artery on its posterior aspect and somewhat obliquely. The coats of the vessel are

converted into a perfect cylinder of calcareous matter to beyond the sac, when the vessel becomes more nearly healthy. The right coronary artery is also diseased. The heart is large, weighing 13 oz.; its cavity is dilated and contains ante-mortem coagula at the apex.

The patient died of influenza in an epidemic of that disease in 1847, and it does not appear that the aneurism did anything towards accelerating his end. The case is recorded in the 'Monthly Journal of Medical Science,' March 1849. (See also Trans. Path. Soc. vol. i. p. 227.)

Presented by Dr. Peacock, 1876.

- 3034.** Portion of a heart, showing entire obstruction of the trunk of the left coronary artery. It is converted into a cylinder of calcareous matter for an inch and a half from its origin, and its cavity is entirely obstructed by a plug of decolorized fibrin. A mass of calcareous matter occupies the right sinus of Valsalva, and surrounds and contracts the orifice of the right coronary artery. The aortic valves and the free fold of the mitral are thickened, but without producing any material valvular disease. The heart weighed 14 oz., and the muscular walls were extensively fatty. The aorta was atheromatous, the lungs emphysematous, and the kidneys granular.

From a female, aged 60. She had suffered from dyspnoea for six months, and had some dropsy of the lower extremities. She had attacks of severe pain in the region of the heart, accompanied by faintness and a feeling of impending death, the pulse being intermittent. No disease of the heart could be detected after repeated examinations. She died suddenly. (Path. Soc. Trans. vol. ii. p. 48.)

Presented by Dr. Peacock, 1876.

Chronic Disease of the Aortic Valves associated with Congenital Malformation.

- 3035.** Part of an aorta, with its valves, which appear to have been, congenitally, only two in number. Both valves are rigidly fixed in the raised position, with only two narrow chinks

between them near their angles. Both valves are thickened and opaque, and rough masses and bands of hard earthy matter are deposited in them.

The history of the case is published by Mr. Crisp, in his 'Treatise on the Blood-vessels,' p. 87 (London, 1847).

"H. P., aged 45, of fair complexion, and rather low stature, but very muscular, by trade a gardener, of temperate habits, became ill about ten years since, but not so much as to prevent his working, except occasionally, when he complained of shortness of breath: he never had œdema of the extremities, or any other dropsical symptom. He suffered occasionally from slight cough; and, about a month before his death, his breathing became extremely oppressed, his pulse small, and intermitting; the heart's impulse was very much increased, and at times strong; the sound, on percussion, dull over the whole of the left side; a loud bellows-sound and *frémissement cataire* were generally present. While stooping to take up something from the ground he fell forward, and died instantly."

Presented by Edwards Crisp, Esq.

3036. Aortic valves, affected with disease which originated in malformation. They are only two in number. They are considerably thickened and indurated, and present an irregular surface, without, however, much recent exudation. The larger of the two valves is imperfectly divided by a firm ridge on the upper or aortic side, so as to mark its former separation into two distinct valves, and to produce two imperfect sinuses of Valsalva, a right and a posterior one; the latter considerably dilated. The free valve of the mitral orifice is much thickened. The heart was considerably hypertrophied on both sides, and coated with an excess of fat.

From a man, aged 57, who died of pleuro-pneumonia. Six weeks before his death he had influenza, and was then noticed to have an irregularly acting heart and a slight systolic murmur over the aortic orifice. When a boy of about twelve, he had experienced a sudden sense of uneasiness in the region of the heart while running, and he had subsequently suffered from palpitation and dyspnoea on active exertion.

Presented by Dr. Peacock, 1876.

3037. Part of an aorta with the aortic valves affected with disease which is supposed to have originated in malformation. The

two anterior portions are completely fused at their contiguous angles, forming a single flap, with a thick partition in its centre. In all the portions a good deal of thickening and calcareous change has taken place, by which the aortic orifice is reduced to a slit-like aperture.

Presented by Dr. Peacock, 1876.

- 3038.** Part of the aorta, showing two of the aortic valves fused together and all contracted and much thickened by calcareous matter. By this means the aortic orifice is reduced to a mere slit, ten lines in length. The line of attachment of the original valves to the aorta can be readily traced. The heart was somewhat large, and weighed 10 ounces.

From a female 76 years old, who had always enjoyed very good health, and was not known to have suffered from rheumatism or heart-disease. She died of strangulated hernia, and till the occurrence of her fatal illness could go to the top of the house without difficulty or dyspnœa.

Presented by Dr. Peacock, 1876.

- 3039.** Aortic valves, with the adjacent aorta, mitral valves, and a portion of the left ventricle, showing disease of the valves, with congenital malformation. The contiguous margins of the right and posterior valves of the aortic orifice are adherent, and the corresponding angle is atrophied. A part of the united fold has not expanded in proportion to the rest.

From a porter, aged 40, who had formerly been a sailor. He had suffered from a severe attack of rheumatic fever eleven years before he died, and had ever afterwards been subject to rheumatic pain. Though he had committed occasional excesses, he asserted that he had never been intemperate. For the last four years he had been liable to affections of the chest during the winter. Three months before his death his health became impaired and he had cough, difficulty of breathing, and palpitation of the heart. He was admitted with dropsy, expectoration of blood, and an audible double aortic murmur. He had complete orthopnœa, and gradually became livid, and died.

The inspection showed that the lungs were both emphysematous and œdematous, with some fluid in the right pleura. The pericardium was universally adherent by old and firm cellular attach-

ments, and the whole interior of the heart was in the condition represented in the preparation.

For a description of the case and figures, see 'Edinburgh Monthly Journal of Medical Science,' 1853, p. 396, Case 3.

Presented by Dr. Peacock, 1876.

- 3040.** A heart showing obstructive and regurgitant disease of the aortic valves. The aortic orifice was contracted and only admitted a ball measuring two and a half inches in circumference, or about one third less than natural. This is due to the blending together of the adjacent parts of the several valves, together with general thickening and calcareous change. The left ventricle is dilated, but its walls are not much thickened ; the right ventricle and auricle are dilated. The heart weighed 20 ounces.

The patient, aged 45, had never had rheumatism, or sustained any serious injury, and he had only been ill three months. For these reasons, and from the adherent state of the parts of the valve, Dr. Peacock regarded the case as one of malformation with disease supervening. He suffered from the usual symptoms, but without dropsy, and a double bruit was heard.

Presented by Dr. Peacock, 1876.

- 3041.** A portion of aorta, with its valves, which are a little thickened and opaque. Two of them are so united by their adjacent edges that they present a continuous curved margin, like that of one valve. Their united edges form a prominent ridge, passing from the middle of their free border to the wall of the artery ; and along this ridge a large quantity of calcareous matter is deposited in coarsely accumulated granules. It is very like the *cross-bar* mentioned in the description of No. 3045 by Mr. Hunter ; and probably, like it, indicates a congenital union of the valves. *Hunterian.*

- 3042.** A portion of a heart, exhibiting extreme disease of the aortic valves, probably originating in malformation. The heart is enlarged, weighing $15\frac{1}{2}$ ounces, and the aortic valves are only two in number. This deficiency is most probably due to a congenital fusion of the right and

posterior valves. The disease is, however, so extensive that the mode of origin of the malformation is less obvious than usual. The bar which marks the line of fusion is on the upper side of the valves; the origin of the right coronary artery corresponds to the situation which it should have occupied had there been three distinct portions, and there is an indistinct sulcus at the centre of the base of the united valves on the ventricular side. The two existing segments are nearly equal in size. The fibrous zone thus formed is extensively calcareous, and the aorta is atheromatous. The sinus of Valsalva corresponding to the united segment is considerably dilated. The wall of the left ventricle measured, when fresh, upwards of an inch in thickness.

From a man, aged 64, who was admitted to the Wilts County Asylum for melancholia and suicidal tendencies. He had suffered for years from dyspnoea and lividity of the face. He died with a gangrenous form of pneumonia. (Path. Soc. Trans. 1855-56, vol. vii. p. 92.)

Presented by Dr. Peacock, 1876.

- 3043.** A heart with malformation and disease of its aortic valves. The two anterior valves are united by the blending together of their adjacent angles; they are both imperfectly developed. The two valves thus formed are of nearly equal size, but they are thickened and hang badly; in consequence, the edge of the segment formed by the union of the two valves falls below the plane of the other valve, and allowed of regurgitation. The heart was altogether enlarged and its substance firm. It weighed $20\frac{3}{4}$ ounces. The endocardium of the left ventricle is white and thick, and the cavity much dilated. The chordæ tendineæ of the mitral valves are thickened and shortened, and the orifice is slightly diminished in capacity.

From a girl, aged 11, who enjoyed good health till seven or eight years of age. After an attack of measles she began to emaciate, with cough, expectoration, and short breath after exertion. She became seriously ill when about ten. She had never had scarlatina or rheumatic fever, but when her symptoms became more severe her limbs were slightly swollen and painful so that she could not walk, the swelling involving both feet and ankles. There was a rough short systolic murmur at the base of the heart

followed by a softer diastolic one. There was a feeble murmur of a creaking character towards the apex, evidently distinct from the murmurs at the base and not audible behind. She gradually became dropsical, and died. (See Path. Soc. Trans. 1876, vol. xxvii. p. 59.)

Presented by Dr. Peacock, 1876.

- 3044.** Portion of a heart, in which two of the segments of the aortic valves are blended together, much thickened, indurated, and in some places calcareous. The blended segments project into the canal of the vessel and greatly reduce its dimensions. A small opening beneath the posterior segment leads into an aneurismal cavity situated in the substance of the ventricular septum at its junction with the aorta. Above it a second and larger aperture, between the right and posterior segments, leads into the same cavity, which also communicates by a superior opening with the left sinus of Valsalva. The aneurism is about half an inch in diameter. The mitral valves are thickened and opaque, and some shreds of lymph were adherent to their free margins. The left ventricle was both hypertrophied and dilated; the left auricle enlarged and its walls much thickened. The right ventricle also was dilated and hypertrophied. The heart weighed 12 ounces.

From a man aged 40, an iron-founder. He had never suffered from any serious illness, and was in good health till twelve weeks before death, when he suffered from pain, probably rheumatic, and swelling of the legs, followed by dropsy. A loud systolic murmur was heard in the præcordial region, distinct between the nipple and the sternum and at the base of the heart, and but faintly audible below the mamma. He was very prostrate with urgent dyspnœa, expectoration of blood, and anasarca. (See 'Disease of the Valves of the Heart,' p. 19, case 7.)

Presented by Dr. Peacock, 1876.

- 3045.** The valves of an aorta, almost uniformly thickened and opaque, with some patches of calcareous matter beneath their arterial surfaces. Only one of them is completely formed, and this is large enough to close nearly half the orifice of the artery; the other two constitute but one imperfect valve. This malformation of the valves was in all probability congenital.

"We dissected a man who had been remarkably strong, but was now very much emaciated. All his abdominal viscera were sound. His brain sound, except some small stony concretions on the upper part of the pineal gland. The heart and lungs were sound. On examining the valves of the aorta, I found that there had been two only instead of three, and that one of them had a kind of frænum or cross-bar attaching its middle to the side of the artery. These valves were very much diseased, and had become thick and strong, by which means they did not meet entirely, or by even edges. The left kidney had two pelves, and two ureters, which entered the bladder by two orifices."—*Hunterian MS.: Dissections of Morbid Bodies*, No. 85, p. 126.

The specimen is represented in Baillie's 'Morbid Anatomy,' fasc. i. pl. 2. fig. 5.

- 3046.** The valves of an aorta, thickened, opaque, and rendered almost completely inflexible by the presence of a large quantity of calcareous matter projecting in irregular masses upon their surfaces. Either there were congenitally only two valves, or, which is less probable, the adjacent edges of two of the valves are united, from their angles of attachment to the corpora Arantii, so smoothly that no trace of their proper borders remains, except in a bar of earthy matter crossing their aortic surface. The orifice of communication between the aorta and the ventricle is reduced to a very narrow fissure. *Hunterian.*

The specimen is represented in Baillie's 'Morbid Anatomy,' fasc. i. pl. 2. fig. 3.

- 3047.** Part of the base of a heart, with malformation and disease of the aortic valves. They are all adherent and form a septum in which there is much calcareous matter. The valves scarcely admitted of any motion and, by imperfect adjustment, a somewhat triangular aperture was left, through which a column of water placed in the aorta regurgitated slowly. The ascending aorta was rather large. The mitral valves and ventricular endocardium are thickened.

From a man, aged 23, engaged at a steam-saw-mill. He had enjoyed good health till about eight months before his death, when, without any obvious cause, he began to suffer from palpitation and shortness of breath. Two months before death he had a severe attack of hæmoptysis, but continued to work till six days before death. A double murmur was heard at the base of the

heart. He died suddenly. His father had died suddenly at 40, and one sister was said to have some affection of her heart; but he had never had rheumatism or any other serious illness, and could assign no cause for this valvular disease except that he had to press with his chest against pieces of timber during his work. (Path. Soc. Trans. vol. xix. p. 163.)

Presented by Dr. Peacock, 1876.

3048. A transverse section of an aorta, displaying extensive and old disease of the valves, both obstructive and regurgitant. The valves are much thickened and indurated by hard calcareous masses, forming, as in the last specimen, a funnel-shaped septum with a central aperture which they were incapable of entirely closing.

From a gentleman, aged 40. He ascribed his first illness, which was of quite recent date, to having taken cold. He had dyspnoea and some oedema of the lower extremities. The pulse was excessively irritable and weak; a loud systolic murmur was heard at the base of the heart, and the second sound was inaudible. He rapidly became excessively prostrated, the dropsical symptoms increased, he had urgent difficulty of breathing, and died a week after he was first seen. He had not been observed to be short-breathed on exertion. He was irregular in his habits, had been used to horse-exercise, but had never had rheumatism or any other serious illness. He had, however, been very delicate in early life. The case is recorded in Path. Soc. Trans. vol. ix. p. 61; also in 'Valvular Disease of the Heart,' case 5, p. 16.

Presented by Dr. Peacock, 1876.

Other Specimens of Diseases of the Heart are:—Nos. 2, 3, 20, 146, 164, 165, 560, 561, 569, 570, 3155, 3163, 3164, 3170.

Series XXXIII. INJURIES AND DISEASES OF ARTERIES.

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 Ulceration extending into Arteries : 3269, 3270.
 Entozoa in Arteries : 3271.

Wounds and other Injuries by External Violence.

- 3049.** A portion of the aorta of a man who fell from a considerable height in such a manner that his spine was violently

bent backwards. In the inner and middle coats of the aorta, at its posterior part, there are two narrow transverse cracks, measuring together about three-quarters of an inch in length. Directly over these there is a small aperture in the external coat. There are numerous deposits of fatty matter in the middle and inner coats.

The patient, a man aged 54, was brought dead into the London Hospital, having fallen from a topmast. In the examination of the body about two quarts of blood were found in the abdominal cavity. The third lumbar vertebra was fractured across its body, and the transverse processes of the vertebræ next above and below it were also broken.

Presented by John Quekett, Esq.

- 3050.** The arch of an aorta torn almost completely asunder, immediately beyond the point of attachment of the ductus arteriosus. The aorta appears quite healthy, with the exception of slight narrowing and atheromatous deposit near the seat of laceration.

From a man aged 35, who died struggling while a heavy frame of wood rested on him, causing great compression of his thorax. (See Trans. Path. Soc. vol. i. p. 85.)

Presented by Dr. Peacock, 1876.

- 3051.** Part of a heart, with the ascending aorta. In this vessel, immediately above the semilunar valves, is lodged a piece of integument (resembling in character that of the axilla) about an inch in diameter, with a considerable thickness of subcutaneous fat, forming a mass which must have nearly equalled the calibre of the vessel. Immediately above this is a musket-ball of the ordinary size. Both the piece of skin, or rather the adipose tissue belonging to it, and the bullet are adherent by means of recent lymph to the inner surface of the right wall of the aorta, at about the middle of the ascending portion of the arch. The aorta has been opened anteriorly, and part of the wall has been cut away in making the preparation.

When this preparation was remounted in 1862, the surface of the bullet had become completely oxidized, and it had fallen from its place, leaving a thick crust of oxide of lead adhering to the wall of the artery and to the intruded piece of skin and fat. It has

been replaced, and is retained artificially in the position it originally occupied.

The following history accompanied the specimen:—"Mr. Brunton, Assistant-Surgeon on board the hospital ship in the Mediterranean, says that a boat's crew, detached to cut out a vessel, met with such determined resistance that several were killed or wounded, and amongst the latter was a seaman who affirmed that a musket-ball, striking his oar, had run along it and entered his side: he bled a good deal, and then, almost completing the third day from the injury, died.

"The post-mortem examination showed that a wound was made between the eighth and ninth ribs, and passed through the diaphragm into the pericardium, which was found full of blood, and the hole made by the shot closed-up by firm coagulum. Much blood had escaped into the chest and abdomen, not only from the vessels wounded in the course of the ball, but from the heart itself. The ball was found adhering to the inner side of the aorta; and there it is now."

Presented by Sir Stephen L. Hammick.

3052. Part of a thoracic aorta, ruptured transversely through all its coats, and round nearly five-sixths of its circumference. The injury was the consequence of a heavy fall upon the back. The tissues of the artery appear to have been healthy.

The patient, a man 46 years old, was admitted into the London Hospital, April 20th, 1840. He was supposed to have lived ten minutes after a waggon passed over his body.

In the examination, the first cut through the right pleura was made evident by a sudden gush of blood, of which above two quarts were contained in this side of the chest. On turning up the right lung, the pleura forming the right lateral boundary of the posterior mediastinum was much discoloured, and ruptured at one part. The aorta opposite the ninth dorsal vertebra was almost wholly divided, the continuity being only preserved by a piece about one fourth of an inch broad. The blood had made its way into the abdomen, through the aortic opening in the diaphragm, and much of it was found partially coagulated near the spleen. The ninth dorsal vertebra was fractured through its body, and the transverse processes of the vertebræ above and below it were also fractured.

Presented by John Quekett, Esq.

3053. The iliac arteries of a man, 27 years old, who fell from a height of six or eight feet upon a sharp iron stake. It penetrated the inner side of the left thigh, entered the pelvis, traversed the peritoneal cavity on the left side of the

rectum, and pierced the left common iliac artery in the angle of its bifurcation. Copious hæmorrhage took place into the abdominal cavity ; the blood which flowed externally had the characters of venous more than of arterial blood.

Presented by John Quekett, Esq.

3054. Part of a femoral artery, which was transversely divided, and from which fatal hæmorrhage occurred. The divided ends of the vessel are not more than a line apart, and are wide open ; the cavity of one portion of the artery has been exposed, as if to show the unaltered state of all the coats.

Hunterian.

3055. Parts of a femoral artery and vein, from a patient who died of secondary hæmorrhage after amputation ; probably soon after it, for the vessels present no contraction or other change of condition.

Hunterian.

3056. Portion of integument and subcutaneous tissue with a "traumatic aneurism," consisting of a small, firm, globular coagulum, hollow within, and surrounded by condensed areolar tissue, formed after a wound of the temporal artery. The skin has sloughed over the surface of the tumour.

From a seaman in Haslar Hospital, who had been bled from the temporal artery three weeks previously. Repeated hæmorrhages having occurred from the swelling which formed beneath the wound, it was excised, and both ends of the artery were tied. The patient soon recovered.

Presented by Sir Stephen L. Hammick.

3057. The lower part of a brachial artery, with a small "false aneurism," which formed after a wound made in an attempt at venesection. The artery is laid open from behind, and exhibits a small oblique opening in its anterior wall. The inner and middle coats of the artery are everted towards this opening, and over it a firm circumscribed globular clot, or thrombus, about half an inch in diameter, is closely adherent to it. The artery is healthy in its texture.

The patient was a woman 50 years old, who received some

severe injuries of the head and chest, from which she died after three days. Directly after the artery was wounded a bandage and compress were applied, but not properly. Twenty-four hours after, the limb was methodically bandaged. On dissection the vein was found entire: there was a small aperture in the fascia of the arm through which a minute portion of the coagulum protruded. The coats of the artery were deep red for some distance above and below the puncture.

From the Museum of Robert Liston, Esq.

3058. An arterio-venous aneurism of the superficial femoral artery and its vein, the consequence of a wound penetrating both artery and vein about three inches below the origin of the profunda. The vein is occluded, and a blue glass rod is passed across it through its communication with the artery and into the aneurismal sac. The sac is nearly spherical, and against its wall, which is thin, the profunda artery is much compressed, and one of its branches, with the corresponding vein, is obliterated. The cavity of the sac contains, close to its orifice, a mass of coagulum hollow in the centre.

From a man, aged 45. The injury was inflicted with a pocket-knife ten years and a half before death. A continuous bruit was audible both to the patient and to those near him; but the aneurism did not form till nearly the end of this period. An operation for ligature of the external iliac artery was commenced, but the patient died under chloroform. (See 'Medical Times and Gazette,' vol. ii. p. 87 (1867), and Holmes's 'System of Surgery,' 3rd ed. vol. iii. p. 87.)

Presented by William R. Beaumont, Esq., 1867.

3059. The principal arteries and veins of the upper part of the left thigh, which had been perforated by a Minié rifle-ball. The superficial femoral artery is intact, but the accompanying vein has more than half its calibre shot-away. At about two inches from its origin there is a large wound in the profunda artery, around which has formed a "false" or "traumatic aneurism," the wall of which consists of a firm, laminated coagulum, nearly the size of a pigeon's egg. The profunda vein was uninjured.

From a soldier of the 4th Regiment, aged 25, wounded at the siege of Sebastopol, August 14, 1855, by a Minié ball of the largest size, which entered the left thigh about two inches below Poupart's ligament, passed backwards and slightly outwards, fracturing the

femur, and was cut out at the back of the limb, completely flattened. The hæmorrhage, both arterial and venous, was very great; so much so that it was thought inexpedient to continue an attempt made to tie the wounded vessel. A compress was applied, which seemed to restrain it effectually; but death took place on the eighth day after the receipt of the injury.

The case is reported in the "Addenda" to the sixth edition of Guthrie's 'Commentaries in Surgery,' p. 16.

Presented by Deputy Inspector-General R. Taylor.

3060. Part of a popliteal artery, from which, in consequence of rupture of a small portion of its coats, blood escaped into the surrounding cellular tissue. A sac, with walls about a line in thickness, composed of the surrounding tissues laminated and condensed, formed round the coagulated blood; but it is now emptied, the coagulated blood being turned downwards. A portion of whalebone is passed through the aperture in the artery into the cavity of the sac.

There can be little doubt of the following being the case of the patient from whom this preparation was taken:—

"John Staples, aged 33, by trade a lamplighter, about the latter end of March, by a board giving way under him, his right leg slipped down as low as his ham between two other boards, but he did not feel any inconvenience from the accident, nor even a discoloration of the skin.

"About a fortnight after he perceived a small swelling in his ham, accompanied by a strong pulsation: the swelling increased, with considerable pain, for some weeks, the two last of which he was in great misery. June 4th, rather more than two months after the accident, he came into the hospital. The whole leg was now much swelled, very painful, and there was a confused pulsation; but there was so much tension in the part, that the disease could not be well ascertained. He had common bread and milk poultice applied until June 30th, when amputation was performed.

"Upon the examination of the parts after their removal, it plainly turned out to be a rupture of the artery, but whose orifice was extremely small: it allowed at once the blood to escape into the cellular membrane opposite to this opening, which we may suppose dilated a cell or cells, and at the same time squeezed one cell against another, forming an artificial coat, which dilated from the force of the blood to the size we found it, and in the end had the common effects produced in it that take place in an aneurism when its coats, both natural and acquired, give way, viz., the blood becoming diffused into the general cellular membrane of the surrounding parts.

"On cutting into the tumour, and scooping out the coagulated blood, then introducing a probe into the sound artery above, it readily passed through a small lateral opening, with rounded or smooth edges, into the cavity of the tumour. On tracing the artery downwards from this opening, I found it passing along the tumour on that side next to the bone, but obliterated nearly the whole diameter of the tumour, and become so soft and pulpy as not to be distinguishable from the other parts, which were composed of coagulated blood, cellular membrane, artery, &c. In tracing the artery from below, I also lost it in this mass. The crural artery, as it approached this lateral orifice, for about two inches in length, became contorted or serpentine in its course, similar to what sometimes takes place in an aneurism.

"Here was a case where there was every external appearance of an aneurism, such as a circumscribed swelling, with a pulsation.

"This was what would be called, or understood by, a spurious aneurism; but it was properly a rupture of the coats of the artery, and which, I do imagine, is only to be distinguished from the [true] aneurism, or dilatation, by the time it takes in coming to its ultimate size: viz., from its first appearance to its threatening destruction to the parts beyond, as a limb, or destruction in the surrounding parts in which it is placed, threatening mortification and bursting. An aneurism being as many months in coming to this ultimate as this disease was days; for in an aneurism, although the artery gives way at last, and then its coats are principally composed of the condensed cellular membrane, as in this case, yet it is strong, owing to the time it has had to thicken and form a coat while the artery was dilating."—*Hunterian MS.: Cases and Observations*, No. 44.

- 3060 A. A portion of a popliteal artery, of which the inner and middle coats are torn through and separated for one third of an inch in a downward direction from the external coat.

From a young man, aged 19 years, whose knee was very heavily struck and driven against the edge of a board on which he sat. Increasing swelling of the knee and threatening gangrene necessitated primary amputation. In addition to the injury to the popliteal artery one of the condyles of the femur was fractured.

Presented by Walter Rivington, Esq., 1877.

Rupture by Force from within.

3061. The arch of an aorta, generally, but irregularly and in a slight degree, dilated. It has been ruptured, probably by the force of the contraction of the left ventricle, about an

inch above the valves. The coats at the situation of the rupture are not more dilated than elsewhere ; they are torn obliquely, and partially separated by the blood effused, for some distance around the rupture, between the outer and middle coats. There is no remarkable appearance of disease in the texture of the arterial coats at any part ; the inner coat is wrinkled and seamed, and there are a few fatty deposits beneath its surface. *Hunterian.*

3062. The arch of an aorta, with its principal branches, and part of the heart. “Just below where the innominata is given off, the inner and middle coats are ruptured for half the circle of the aorta, on the great curvature, as clean as if cut with a knife, and in a straight line around. The blood effused through the rupture separated the outer from the fibrous [middle] coat, down to the origin of the aorta, along the fore part, and around the great curvature to the back part, dissecting thereby two-thirds of the artery.” “The dissecting process has also been continued for an inch beyond the left subclavian on the descending aorta, and effused blood was contained in the cavity formed between the coats.” . . . In the “arteria innominata is another rent of all the coats, which runs transversely across the anterior half of it, and from which the hæmorrhage took place which killed the patient.” “The descending portion of the aorta and the roots of the great vessels are covered with atheromatous patches, some few having bony scales. The coats were all easily separable by the fingers from each other, and softer and more readily broken than natural. Similar atheromatous patches are seen in the coronary arteries. The walls of the left ventricle are one inch thick; the mitral valves are thickened and indurated ;” and the aortic valves and the lining membrane of the heart below them are thickened and ossified.

The patient, an old woman, was supposed to be asthmatic. On making an exertion, in getting up in bed, she fell back, and expired almost immediately.

The case, from which the preceding quotations are taken, is detailed in Mr. Guthrie's work ‘On the Diseases and Injuries of Arteries,’ p. 43 (London, 8vo, 1830).

Presented by George J. Guthrie, Esq.

3063. The greater part of a left femoral artery. The upper half of the vessel has been laid open, showing great dilatation of its coats, and abundant atheromatous deposits, and a few calcareous plates on its inner surface. In the superficial femoral, three and a half inches below the origin of the profunda, is a transversely elongated aperture, extending round nearly one half of the circumference of the vessel, with ragged edges. As much as can be seen of the interior of the artery at this spot shows it to be diseased in the same manner as the upper part, though in even a greater degree.

From a gentleman aged 73, of middle stature, inclined to corpulency, and of a gouty diathesis. On going to bed on the 13th of March, 1858, he found a slight swelling at the top of the left thigh, near the groin. He had for several days previously felt a slight pain at the same spot, and had been generally out of health, suffering from occasional attacks of shortness of breathing, with pain in the region of the heart resembling angina pectoris, slight bronchial catarrh, and had had several fainting fits. The urine was loaded with albumen. On the 14th, a hard, brawny, œdematous swelling occupied the anterior half of the upper third of the left thigh; and there was a decidedly prominent point over the rectus femoris muscle, about five or six inches below the bend of the groin. On the 15th the swelling had increased, and extended under Poupart's ligament for about two inches. It was hardest at its upper part. Pulsation was perceptible to the eye and touch in the prominent part of the swelling; and ecchymosis, to a considerable extent, had made its appearance. There was no pulsation in the tibial or popliteal arteries. On the 17th the ecchymosis had extended considerably below the knee, the ankle was slightly swollen, and the swelling in the upper part of the thigh had become softer. In the evening he became delirious; the pulse feeble and rapid. He became unconscious during the night, and died early on the 18th. His general condition had been such as to preclude the advisability of operative interference.

The left thigh measured, at its greatest circumference, five inches more than that of the opposite side. The swelling and ecchymosis extended downwards to the ankle, and upwards above Poupart's ligament in front, and over the glutei behind. There was considerable prominence in front of the thigh, in the spot above indicated. On cutting into the thigh, the skin and tissues beneath were found gorged with extravasated blood, and large clots lay loose among the muscles. At the upper third of the thigh, the sartorius, rectus femoris, vastus internus, and the adductors were more or less broken-up by the extravasated blood. The psoas and iliacus muscles were infiltrated, the anterior crural nerve was raised, and the femoral vessels pushed inwards out of their proper

course; the sheath of the vessels contained no coagula above the origin of the profunda. No traces of any aneurismal sac could be found.

The specimen has been figured, and a full account of the case (from which the above abstract was taken) given by Mr. Alfred Leggatt, in the 'Transactions of the Pathological Society,' vol. ix. p. 159.

Presented by Cæsar H. Hawkins, Esq.

3064. A ruptured "dissecting aneurism" of the ascending aorta.

The rupture of the inner coat of the aorta is transverse and linear, about one inch above the aortic valves. The sac is formed between the layers of the middle coat; the external rupture is longitudinal, opening into the pericardium. It is on a somewhat lower level than the internal, and a bristle is passed through both, traversing the sac.

From a woman, aged 56, of intemperate habits, who had for some time been subject to asthma. She went one night to bed in her usual health, and was found dead the following morning. (See Dr. Peacock, "On Dissecting Aneurism," Edinburgh Medical and Surgical Journal, vol. lx. p. 278, case 1.)

Presented by Dr. Peacock, 1876.

3065. The arch of an aorta, opened from behind to show a rupture of its coats on the outer side and behind the left subclavian artery. The rupture is as a transverse slit through all the coats, extending around about one third of the circumference of the vessel, and partly separating from it the subclavian artery. The blood passed between the fibres of the middle coat and penetrated the cellular tissue outside the aorta. There is a second rupture near the origin of the common carotid, the coats of which have been forced asunder for a short distance, as indicated by two bristles.

From a man aged 45, who was suddenly seized with violent pain in the epigastrium and dyspnœa. This attack subsided, but several recurrences took place, and death occurred during one of them, on the seventh day after the first. A coagulum weighing several pounds occupied the posterior mediastinum, separating the left pleura from its attachments to the thoracic walls, and compressing the lung. There was a small clot in the anterior mediastinum, but no blood in either of the pleural cavities, or in the pericardium. The heart and its valves were not diseased, the

ascending aorta was somewhat dilated and its coats atheromatous and thickened. (See Trans. Path. Soc. vol. xvii. p. 50.)

Presented by Dr. Peacock, 1876.

- 3066.** The arch of an aorta, showing partial ruptures, one in its ascending, the other in its transverse portion. The ascending part is much dilated and its coats are thin and atheromatous. On the right side, an inch above the aortic orifice, and indicated by a bristle, is an irregular slit three quarters of an inch in length, extending obliquely across the artery, and penetrating nearly the whole thickness of its proper coat, so as to leave only the corresponding covering of pericardium entire. At the posterior part of the root of the innominate artery, immediately beyond its origin, is a second rupture, also indicated by a bristle. This is about one third of an inch in length, and extends through the internal coat and a portion of the middle coat. The blood escaping caused separation of the layers of the middle coat along the posterior part of the arch of the aorta for a distance of between three and four inches, forming a sac which terminated about one inch and a half beyond the left subclavian artery. The separation of the coats is shown on the cut wall of the aorta.

From a man, aged 44, not subject to rheumatism; he had been intemperate in early life. He suffered from palpitations after a blow on the left side of his chest twelve years before death, and at length from severe attacks of dyspnoea and syncope. He died after a sudden onset of pain commencing in the abdomen and extending to the præcordia. The pericardium was found enormously distended by fluid blood and clot. A transverse slit about an inch in length was detected in the pericardium, covering the root of the aorta. The heart weighed twenty ounces.

A complete account of the case will be found in the 'Edinburgh Monthly Journal of Medical Science,' September 1849; it is also referred to in the donor's work 'On Valvular Disease of the Heart,' p. 52.

Presented by Dr. Peacock, 1876.

- 3067.** Preparation showing the results of an experiment by which an artificial dissecting aneurism was produced, after death, in the ascending aorta by the rupture of the internal

and part of the middle coat, and the forcible injection of water into the vessel. The layers of the middle coat are separated over a large portion of the ascending aorta, and there is a longitudinal rupture through the outer layers, by which the fluid escaped into the cavity of the pericardium.

The subject on which the experiment was performed was the body of a female, aged 30. (Lond. & Edinb. Month. Journ. of Medical Science, October 1843, exp. 4.)

Presented by Dr. Peacock, 1876.

3068. Preparation of a similarly formed artificial dissecting aneurism, produced by tearing the internal and a portion of the middle coat of the descending thoracic aorta. The laminæ of the middle coat are separated from the lower extremity of the vessel to the origin of the aorta, and for some distance up the great vessels.

From the body of a female, aged 62 years. (Lond. & Edinb. Month. Journ. of Medical Science, October 1843, exp. 5.)

Presented by Dr. Peacock, 1876.

Union of Wounds and other Injuries of Arteries.

3069. Part of the femoral artery of a Boar.

The following passage in Mr. Parkinson's MS. Notes of Mr. Hunter's Lectures, 1786, p. 6, probably refers to this preparation:—"The crural artery of a Boar being divided, the bleeding ceased before the animal seemed weak; and upon examination this effect appeared to have been produced by a quantity of firm coagulated blood, which had not only outwardly closed the orifice [in the integuments?] but within had regularly and conically contracted the diameter of the canal"—*i. e.* blood had collected in the tissue around the artery, and there coagulating had, by its pressure upon the exterior of the vessel, put a stop to the hæmorrhage. There is no coagulum within the artery.

Hunterian.

3070. Part of the carotid artery of an Ass, divided in the middle of its course. The animal bled to death. The divided ends of the artery are separated more than half an inch:

they are contracted, and contain small coagula of blood. The parts around them appear to have been compressed by the effusion of blood. A portion of coagulum remains in the wound leading down to the artery. *Hunterian.*

3071. Part of a popliteal artery, which was lacerated in a compound fracture of the lower part of a femur, caused by a car falling on the knee. The lacerated extremity is abruptly contracted and nearly closed. The coats of the artery appear healthy.

All the soft parts about the artery were extensively lacerated, and the joint was laid open. At first the orifice of the artery was found quite closed. The end of it contained no coagulum, but blood was effused in the tissue round it. The popliteal vein and nerves were entire.

From the Museum of John Howship, Esq.

3072. The end of the umbilical artery of a Calf, soon after its separation from the placenta. Its extremity has been irregularly divided. The distal portion of the canal is filled with coagulated blood, so as to be completely impervious. Above the coagulum, the calibre of the artery is considerably diminished, but its canal is open.

Hunterian.

Effects of the Application of Ligatures to Arteries.

3073. Two portions of healthy artery, laid open to exhibit the division of the middle and inner coats by ligatures applied after amputation of a limb. The line of division is straight; the margins of the divided coats are nearly level and are slightly incurved. *Presented by Sir William Blizard.*

3074. Part of the femoral artery of a man who had a popliteal aneurism. The artery is enlarged, and its inner coat is very deeply wrinkled transversely. A quill is passed beneath it in the line through which a ligature was carried; the inner coats are at this part imperfectly divided, but the canal of the artery is not less here than elsewhere.

Presented by Sir Everard Home.

3075. Part of the carotid artery of a Dog, on which, probably some days before death, two ligatures were applied at the distance of about an inch from each other. The portion of the artery between the ligatures is contracted to about half its former calibre, and at the upper part is nearly filled with a conical clot, one third of an inch long, which is closely adherent to the walls of the artery just below the upper ligature. The ligatures were not yet separated when the dog was killed. *Hunterian.*

3076. Portions of an artery and vein, containing coagula. The coagulum in the artery has an elongated conical shape, as if formed above a ligature, but does not adhere to the walls. That in the vein completely fills the cavity, and is closely adherent to the walls. *Hunterian.*

3077. A femoral artery and vein. A ligature composed of six stout silk cords has been tied upon the artery, near its middle part. Immediately above the ligature, the contracted canal of the artery is filled with a soft, grumous, and adherent clot of blood; its coats are deeply blood-stained. The coats of the vein are similarly stained; they are contracted at the part near the ligature; below that part a thin patch of lymph is adherent to their inner surface, and above it there is a large coagulum of blood, apparently recently formed.

Presented by Sir Everard Home.

3078. Parts of a femoral artery and vein, from a stump. The extreme end of the artery is closed, and just above it is a small pale conical clot of blood, decolorized, a part of which is intimately adherent to the side of the vessel. The vein is healthy to its extremity, which is thickened and contracted. *From the Museum of Sir A. P. Cooper.*

3079. A femoral artery, secured by a silk ligature, which appears to have nearly cut its way through the vessel. The

coagulum above the ligature fills the artery for a short distance, and then tapers into a thread-like extremity.

From a woman, aged 72, who died six days after amputation for severe compound fracture.

Presented by John Gay, Esq., 1873.

3080. Parts of a femoral artery and vein, from a stump. The extremity of the artery is completely closed, and the tissues around it are condensed. A bristle is passed beneath a band of apparently newly-organized substance (the organized conical clot?), which extends from the interior of the closed extremity of the artery to an adjacent part of its inner wall. Coarse injection was driven into the vessels before the examination, and is only partially removed.

Hunterian.

3081. The lower part of an aorta, the iliac arteries and veins, the vena cava inferior, and a large medullary tumour, from a lady, in whom the right common iliac artery was tied a year before death. The ligature, enclosing the portion of the artery included within it when it separated, is suspended at the side of the specimen: it was applied five eighths of an inch below the bifurcation of the aorta, and three eighths of an inch above the division of the common iliac. The portion of the common iliac artery above the former seat of the ligature is gradually contracted, and, at its end, completely closed by a thin layer of firm tissue, with which its thickened and indurated coats have coalesced. Similar firm tissue connects this end with that of the lower portion of the artery, which is similarly but more abruptly closed: and both ends are closely united with the indurated surrounding tissues. The distance between the ends of the artery is not greater than that which was occupied by the ligature; they appear not to have retracted at all after its separation. The upper portion of the artery, near its closed end, contains a very small, dry, pale clot.

The patient was a middle-aged lady. The tumour, which filled a great part of the iliac region, was supposed to be an aneurism of the gluteal artery. A complete account of the case is given in

a lecture, by Mr. Guthrie, in the 'London Medical and Surgical Journal,' vol. vi. p. 101 (August 23, 1834).

Presented by George J. Guthrie, Esq.

3082. The external and internal iliac, with portions of the superficial and deep femoral arteries, together with adjacent parts, from a man in whom the external iliac artery was tied for inguinal aneurism, twelve years before death, by Sir E. Home. The internal iliac and the superficial and deep femoral arteries are pervious, rather above their ordinary size, and apparently healthy in their texture. But the trunk of the external iliac and femoral, from the origin of the former to the division of the latter, is obliterated and converted into a solid cord, which is closely connected with the surrounding parts, and affords no indication of the part of it to which the ligature was applied, or of that on which the aneurism was situated. The external iliac vein and anterior crural nerve are healthy.

From the Museum of John Howship, Esq.

3083. "Femoral artery, operated upon for popliteal aneurism" [*Hunterian MS. Catalogue*]. Its coats are thickened and rigid; the internal coat, especially, is thick and rough upon its surface, and appears soft. The ligature was probably applied to the middle of that part of the artery which is now laid open, and at which there is an appearance of parts of the coats having been cut through. There is a conical clot of blood both above and below this part; above it, also, there is an aperture in the wall of the artery, but it is not clear how this was formed.

The popliteal artery of the patient's other limb is preserved in No. 3102.

Hunterian.

3084. The distal part of a right subclavian artery, which was ligatured in continuity. The artery is occluded for three quarters of an inch of its length, and entirely obliterated for half an inch; it is surrounded by a mass of firm inflammatory new formation. From the same patient as the next following specimen.

*Failure of the Normal Process of Closure of Arteries
after Ligature.*

- 3084 A. A portion of a right carotid artery, from the same case, to which a ligature was applied, but in which complete closure of the canal was not produced. Externally no constriction is observable at the seat of ligature; but upon the inner surface of the artery is a narrow ridge, forming an incomplete diaphragm, which had a central aperture about a line and a half in diameter. This diaphragm was produced by the ruptured and incurved internal coats of the vessel. No remains of the ligatures could be found in either case.

From a man whose right carotid and subclavian arteries were successively ligatured for an aneurism of the innominate artery. The operation was in both instances conducted under Listerian precautions. The carotid artery was first ligatured, and the wound healed by first intention without the formation of pus; but after ligature of the subclavian artery three weeks subsequently, the patient tore off his dressings, and the wound healed by granulation, with free suppuration.

The patient died, eighty-seven days after the last operation, from the bursting of an aneurism of the thoracic aorta. A small aneurism of the innominate artery was almost filled with laminated clot. (See 'Proceedings of the Medico-Chirurgical Society,' vol. ix. part i. 1881.)

Presented by Frederick Treves, Esq., 1882.

3085. Part of a femoral artery, which was tied at St. George's Hospital for the cure of a popliteal aneurism. No obliteration or contraction of the artery has taken place. A small coagulum of blood, adherent to the lower end of the preserved portion, had probably formed above the ligature. The coats of the artery are healthy, except at the lower end, to which the coagulum is attached; here they appear ulcerated. The adjacent vein is filled with coagulum.

Hunterian.

3086. A femoral artery, with the adjacent parts, from a man whose leg was amputated at St. George's Hospital. Some days after the amputation hæmorrhage from this artery occurred. A ligature was placed around that part of the

granulations of the stump from which the hæmorrhage appeared to proceed, but the artery was not enclosed by it. The ligature is shown in the preparation tied close by the end of the sciatic nerve. The patient died after a few subsequent smaller bleedings, and the end of the artery was found, as now shown, retracted an inch beneath the surface of the stump, and slightly contracted. For half an inch above the open extremity of the artery its interior is rough, as if thickened and superficially ulcerated; and, above this, an imperfect conical clot of blood is closely attached to its walls. All the rest of the artery appears healthy.

Hunterian.

3087. Parts of the abdominal aorta and ureter of a Dog. A ligature was tied round the aorta; ulceration took place beneath and adjacent to it, and extended into the ureter, opening a free communication between it and the aorta. The coats of the artery divided by the ligature have separated widely from each other.

Presented by Joseph Swan, Esq.

3088. The end of a femoral artery, from a stump.

The following account of the case is in the Hunterian MSS. :—

“A boy at St. George’s Hospital, about twelve years of age, had a white-swelling in his knee. He was becoming hectic. It was removed. He soon lost his appetite: no rest, sweats, &c.

“The stump often bled considerably, but when opened, it could not be perceived from whence it came. He became lower and lower, and at last died. On examining the part, I found the granulations ossified. I found that the artery had not adhered above the ligature, but had mortified above three-eighths of an inch, which was sloughing off. This artery must have been taken up pretty high to have been of any service.”—*Hunterian MS.: Cases in Surgery*, p. 81.

Effects of Torsion of Arteries.

3089. Section of a femoral artery which, after complete division, was secured by torsion. Its cut end is closed by a septum about a line in thickness, apparently formed from its coats and sheath combined, the latter being very closely adherent to the outer surface of the former. The ruptured internal coat is incurved. A coagulum is firmly adherent to the

arterial wall, and the canal is closed for half an inch up to a branch along which a bristle has been passed.

From the stump of a thigh. Death occurred eight days after amputation.

Presented by J. Cooper Forster, Esq., 1871.

- 3090.** Section of a femoral artery forty-eight hours after torsion. It is similar to the preceding specimen, and the incurvation of the internal coats is well marked. The external coat is twisted around this, forming a very secure septum. A coagulum a quarter of an inch long fills the artery and adheres to its walls at the seat of torsion.

From a patient who died from shock after amputation.

Presented by J. N. Davies Colley, Esq., 1873.

*Formation of the Collateral Circulation after Ligature
or Division of Arteries.*

- 3091.** The head, neck, and part of the chest of a Rabbit, whose carotid arteries were both tied at the same time. Their trunks are obliterated for about half an inch at the part on which the ligature was applied : but above and below the obliterated parts they have their usual diameter. The circulation in the head and face appears to have been maintained through the vertebral and deep cervical arteries. The lingual, facial, and auricular arteries, and the branches of the vertebral arteries within the skull, appear to be of their usual size.

The effect of the simultaneous ligature of the two arteries was slight. Respiration was quickened for a few minutes, and the rabbit remained dull and disinclined to eat during the day after the operation ; but on the following day it had recovered.

An account of this and the following experiments is in a paper by Sir A. P. Cooper, "On Tying the Carotid and Vertebral Arteries," &c., in the 'Guy's Hospital Reports,' vol. i. p. 457 (London, 1836).

From the Museum of Sir A. P. Cooper.

- 3092.** The head, neck, and part of the chest of a Rabbit, whose vertebral arteries were both tied at the same time, about a

quarter of an inch from their origins. The whole length of the trunks appears to have been obliterated after the operation. The carotids are enlarged, but no anastomosing vessels are shown by which the circulation was maintained.

The usual effects of this operation were that it made the respiration slow and laborious. The fore-legs were weakened, and a much more severe effect was produced upon the animal than when the carotid arteries were obstructed.—*See the observations of Sir A. P. Cooper, l. c. p. 464.*

From the Museum of Sir A. P. Cooper.

- 3093.** The head, neck, and part of the chest of a Rabbit, in which the right vertebral and carotid arteries were tied near their origins, eighteen days before it was killed. The trunks of both the vessels are closed in their whole length. The vertebral and carotid arteries of the left side are dilated and elongated ; no anastomosing vessels are shown.

After the operation, which was performed at the same time on both the arteries, the breathing became laborious, and the fore-leg was partially paralysed. At the expiration of eighteen days the recovery was complete, except that the respiration was difficult when the animal was excited.—*Sir A. P. Cooper, l. c. p. 467.*

From the Museum of Sir A. P. Cooper.

- 3094.** The head, neck, and part of the chest of a Dog, in which both the vertebral and carotid arteries were tied at the same time, nine months before death.

The results of the operation, and the appearances shown in the preparation, are thus recorded by Sir A. P. Cooper in the paper already referred to :—

“ On the 28th of January, 1831, I tied the right and left vertebral, and the right and left carotid arteries of a dog, and all was completed within half an hour. The animal appeared insensible, or as if it were intoxicated ; it had difficulty in breathing ; its pupils were dilated ; its volition was diminished ; and it ran against the leg of the table, or any other body, without seeing or regarding it. When placed upon its legs it fell down on its right side, and had spasmodic twitchings of its hinder extremities.

“ At the expiration of a quarter of an hour, it was still insensible ; it had shiverings, although placed near the fire : it rested its head upon the ground on the right side ; its respiration was still laborious, and its pupils were dilated.

“ After an hour and a half, however, it was able to stand, and, although with difficulty, to stagger around a small room.

"On the 29th it was dull, and indisposed to move. On the 30th it was much the same, and not inclined to move or eat. On the 31st, it walked round the room, and ate about an ounce of food, but would not lap. On the 1st of February it was much better; it ate and drank, and from that time gradually recovered. It afterwards became a good house-dog; and I kept it for nine months, when it was killed, that I might inject it. The number and the size of the anastomoses were very extraordinary.

"The description of them is as follows:—The carotid artery on the right side was obliterated opposite the fifth and sixth cervical vertebræ: below the obliteration it is injected from the aorta; above the obliterated part it is filled with injection, (1) from the inferior thyroideal artery, communicating with the superior thyroideal by large branches; (2) by a large descending cervical branch, dividing into numerous large anastomoses; and (3) by branches from the vertebral artery anastomosing with the external carotid artery on the first vertebra of the neck.

"The left carotid was obliterated from near its origin, but filled with injection above the obliterated part, by the inferior thyroideal artery communicating with the superior, and by the ascending cervical artery from the subclavian, by numerous and large anastomoses, and by an œsophageal artery from one of the intercostals communicating with the superior thyroideal artery.

"The right vertebral artery was obliterated near its origin on the seventh cervical vertebra, but filled with injection above the obliterated part by two branches from the superior intercostal arteries, which passed, on the back of the spine, into the arterial canal of the vertebræ, at the fourth, fifth, and sixth intercostal spaces. The vertebral artery thus produced passed to the second vertebra of the neck, where it formed the basiliary artery, and, in its course, had festoons or loops formed in it, as far as the first vertebra, at each intervertebral substance; and here, upon the transverse process of the first cervical vertebra, it formed communications with the carotid.

"The left vertebral artery was obliterated close to its origin; but was filled with injection by an anastomosing branch from the superior intercostal artery, which entered between the fifth and sixth vertebræ of the neck; and by a second branch, also, from the intercostal artery passing on the posterior surface of the transverse processes of the fourth and fifth cervical vertebræ; then, over each transverse process was a loop of arterial communication, forming down each side a beautiful display of festoons.

"The basiliary artery began at the base of the second cervical vertebra; passed to the junction of the first vertebra to the head, where it again received vessels from the vertebral arteries; and then proceeded, as a single artery, to the points of the petrous portions of the temporal bones; where it formed the commencement of the circle of Willis, which was well filled with injection, and sent off its usual arteries to the brain.

"The vertebral artery also joined the internal carotid artery on the transverse process of the second cervical vertebra of the neck."
—*Guy's Hospital Reports*, vol. i. p. 458 (London, 1836).

3095. A similar preparation, of which Sir A. P. Cooper recorded the following account :—

“On a second occasion I tied the left vertebral artery of a dog. I then secured the right vertebral; and after an interval of eight days I put a ligature on each carotid artery.

“The animal was weakened in its fore-legs; but in other respects it suffered less than the former, and on the following days it took its food as usual.

“The right carotid was obliterated; the injection passed from the aorta to the obstructed part, and above it, by an anastomosing vessel from the vertebral, and by an ascending cervical artery from the right subclavian.

“The left carotid was obliterated, but filled with injection to the place of obliteration, from the aorta; and above, it was filled by an ascending cervical, an inferior laryngeal branch, and others from the vertebral.

“The right vertebral artery was obliterated opposite the seventh cervical vertebra, before it entered the foramen of the sixth vertebra; but above the obliteration it was filled by an anastomosis with the superior intercostal artery: it then ascended through the canal in the sixth cervical vertebra, forming beautiful festoons and junctions with arteries passing over the vertebræ, opposite each intervertebral substance, and joining, by anastomosis, with the carotid at the first vertebra of the neck.

“The left vertebral artery was obliterated at the seventh vertebra; but the artery formed anastomoses, one with the subclavian, and two with the superior intercostal.

“The artery on this side formed similar but larger junctions than the right, opposite to each intervertebral substance, in festoons or loops; and thus the vertebral artery was reproduced and filled with injection from these vessels.

“The two vertebals united to form the basilar artery as usual, and joined with the internal carotids at the circle of Willis.

“Where the basilar artery was first formed, anastomoses were sent to the carotid arteries on the transverse process of the first cervical vertebra.

“The result of tying the carotid and vertebral arteries in the dog is such as I have described; but in the rabbit it is different, as in this animal the arrest of blood in these four vessels is immediately fatal.”—*L. c.* p. 462.

3096. The pelvis, lower part of the aorta, left iliac arteries, and adjacent parts, from a woman in whom the left internal iliac artery was tied ten years before her death.

The case, the first in which the internal iliac artery was tied, is published in two papers in the ‘*Medico-Chirurgical Transactions.*’ The first in the 5th volume (London, 1814), entitled “A Case of Aneurism of the Gluteal Artery, cured by tying the Internal Iliac,

by W. Stevens, Esq., M.R.C.S.L., and Surgeon in the Island of Santa Cruz." The second paper is in the 16th volume (London, 1830), with the title, "An Account of the Dissection of the Parts concerned in the Aneurism, for which Dr. Stevens tied the Internal Iliac Artery;" by Mr. Richard Owen. From this second paper the following is extracted:—

"Maila, a negro woman, imported into the West Indies in the year 1790, had, in 1812, a tumour on the left hip, over the sciatic notch, nearly as large as a child's head, and pulsating very strongly. It had commenced about nine months before, and the woman submitted to the operation proposed by Dr. Stevens on the 27th of December, 1812.

"An incision, about five inches in length, was made on the left side, in the lower and lateral part of the abdomen, parallel with the epigastric artery, and nearly half an inch on the outer side of it: the peritoneum was separated from its loose connection with the iliacus internus and psoas magnus; it was then turned inwards to the division of the common iliac artery. The internal iliac being found, and compressed betwixt the thumb and finger, the tumour ceased to pulsate, and began to disappear; a ligature was passed round the vessel, by means of a probe, and it was tied about half an inch from its origin. The tumour disappeared almost immediately after the operation, and the wound healed kindly. About the end of the third week the ligature came away, and in six weeks the woman was perfectly well. The operation was neither very difficult nor very tedious; the woman did not complain of much pain, nor did she lose an ounce of blood. There was no difficulty in avoiding the ureter; when the peritoneum was turned inwards, the ureter followed it.

"The woman, after continuing to enjoy a good state of health for ten years, died of an affection of the chest in the year 1822. Dr. Stevens being apprised of this circumstance, examined the parts within the pelvis, in the presence of Dr. Kerr and other medical gentlemen of the Island of Santa Cruz, and by injection ascertained that the internal iliac artery had become impervious at the part where the ligature had been applied; and he also found that the ischiatic artery was continued in the character of a ligamentous chord to the place of its exit from the pelvis; but that the glutæal artery was pervious at its origin.

"With this proof of the successful result and due effect of his operation, and having detected the vessel that was the true seat of the aneurism (which until now had been supposed to be of the glutæal artery), the pelvis was removed, with a view to a future and further examination.

"Accordingly, soon after his arrival in this country, Dr. Stevens, at the suggestion of Mr. Lawrence, deposited the preparation in the Museum of the Royal College of Surgeons, and the dissection being entrusted to me [Professor Owen,] he requested me to communicate the particulars to the Society in whose memoirs the case originally appeared.

"As a preparatory step, I threw in some fine injection by the

arteria profunda, in order to facilitate the tracing of anastomosing channels; it ran out very freely by the opening which had been made in the origin of the glutæal.

“Within the pelvis, the external and internal iliac arteries were given off in the usual manner. An incision being made into the left common iliac, and continued down to the part where the internal iliac became contracted, it was found there to have become completely obliterated. The ilio-lumbar artery appears to have arisen just above the part where the ligature had been applied, and the obliteration, in consequence, has not extended to the origin of the external iliac.

“In the state of a ligamentous chord, the internal iliac descended towards the ischiatic notch for the space of an inch, and then suddenly resuming its natural diameter, it again became pervious, and so continued for the extent of half an inch; the glutæal artery arising from the lower part of this space, a sacro-lateral vessel from about the middle, and the obturator artery from the upper part of it. The latter vessel was, however, entirely obliterated; but the sacro-lateral artery was pervious, of the size of a crow-quill, and passed inwards to the second sacral foramen; whilst the glutæal artery, of its natural size, received, close to its origin, two vessels as large as the preceding, given off from the sacro-lateral artery near the third and fourth sacral foramina of the left side.

“The anastomoses of the sacro-lateral arteries with each other and the sacro-median were large and tortuous. Immediately after the origin of the glutæal artery, the ischiatic, obliterated and chord-like, passed on to the lower part of the ischiatic notch; the sanatory processes set on foot by the application of the ligature being uninterrupted by the enfeebled current of blood passing from small canals to a large one.

“Many vessels met with in the course of the dissection of the glutæus maximus and medius were found to have received the injection last thrown in, and were preserved. The glutæal artery was in a healthy condition, and of the natural size; but an elongated tumour, situated between the tuberosity of the ischium and the great trochanter, indicated the true seat of the original disease. This tumour, in length three inches and a half, and about two-thirds of an inch in breadth, was of the sciatic artery*, and consisted of layers of condensed cellular membrane and the peculiar fibrous arterial coat.

“It contained a quantity of dark-coloured, granular, not lamellated coagulum, which, when removed, showed the internal surface of the sac to be somewhat irregular, and raised in small patches by the deposition of soft matter. In some places it appeared to retain the smooth character of the arterial lining membrane. From the ischiatic notch to the tumour the artery was completely obliterated, its texture altered, and the remains of its cavity filled

* The branch which seems to continue the course of the artery, and accompanies the ischiatic nerve.

with indurated and partly calcareous matter. From the lower part of the tumour the sciatic artery was continued down the posterior part of the thigh of an uncommon size, nearly as large as the femoral artery in front; its calibre did not, however, correspond with the apparent magnitude, for its coats were thicker, by at least one half, than any artery of the same size with itself. It was obliterated for about the space of an inch below the sac, and became pervious after receiving an anastomosing vessel from the *arteria profunda*.

“A vessel ramifying between the *glutæus maximus* and *medius* and distributing branches to these muscles, was connected to the commencement of the sac, from which it had probably arisen: it did not, however, open into the sac; but, after becoming contracted near the point of attachment, it there gave off a small artery to the *quadratus femoris*, and received its blood by anastomosing near the *crista ilii* with a superficial branch of the *glutæal* artery. A smaller vessel was similarly attached to the lower part of the aneurismal sac, but neither did it communicate with that cavity; for the blood which it received from branches ramifying in the neighbourhood was diverted from the sac by a small branch given off at the point of attachment.”

3097. A dissection of the neck and the upper part of the right side of a thorax, showing an aneurism of the aorta, for which ligature of the right subclavian and carotid arteries was performed four years before death. The ascending part of the arch of the aorta is dilated, and from the upper and anterior part arises the aneurismal sac, which pushed forwards and destroyed the first portion of the sternum. The sac is partly filled by old, laminated coagulum. The innominate artery is behind the sac, and unaffected, although during lifetime it appeared to be the seat of the aneurism. The right common carotid artery is obliterated throughout; at the ligatured spot it is converted into a slender, rounded cord, below and above which it is flattened and fibrous. The subclavian artery is reduced to a fibrous cord for an inch outside the *scalenus anticus*. Some of the vessels for the collateral circulation are displayed. A large suprascapular artery anastomoses with the *dorsalis scapulæ*. The posterior scapular, arising immediately above the seat of ligature, is also large, and anastomoses with the subscapular. The thoracic branches of the axillary artery are enlarged. There is free communication between the *cervicalis ascendens* and *superficialis colli* below, and with the vertebral

and the branches of the occipital above. Large branches also pass directly from the vertebral, below the transverse process of the axis, and from the ascending cervical to form an adventitious vessel which opens into the external carotid artery immediately above the hypoglossal nerve. The right superior thyroid is large, anastomoses freely with the left, and with the right inferior thyroid artery.

From a woman, aged 34. (See Trans. Path. Soc. vol. xxi. p. 132, and 'Lancet,' vol. ii. 1865, vol. i. 1867, and vol. ii. 1870.)

Presented by Christopher Heath, Esq., 1869,

Atheroma.

3098. A small portion of an iliac artery, of which the inner coat, being reflected, is thicker and harder than is natural, also dense, and opaque white. The thickening is nearly uniform, but in some situations the opacity is greater than elsewhere, so that the reflected coat looks mottled with various shades of opacity. There is a patch of fatty or atheromatous deposit in the thickened coat, more than half an inch in diameter, and surrounded with many others of smaller size. At its centre this deposit is a line in thickness; at its circumference it gradually becomes thinner, till it is lost sight of; the inner surface of the thickened coat is raised by it, and made uneven. The middle coat of the artery appears healthy, but is slightly impressed at the part corresponding with the fatty deposit. *Hunterian.*

3099. A similar specimen, from the same patient. A small thin plate of earthy matter is inlaid near the internal surface of the fatty deposit in the thickened inner coat. The external coat of the artery appears somewhat indurated. *Hunterian.*

3100. A similar specimen. The internal coat is reflected, and its thickening and induration are more plainly shown.

Hunterian.

3101. Portions of an artery, probably the femoral, from the same patient. On their internal surface they appear speckled

with minute punctiform deposits of earthy matter, which are arranged in transverse lines, corresponding with the transverse or circular wrinkles of the inner coat.

Hunterian.

The following is the history of the patient from whom the four preceding preparations were taken:—

“Lieut.-General Desaguliers was only ill for a few days: had something like an ague, but when those fits attacked him he felt distressed in a great degree, and said he should die, but recovered again. The last fit, in which he died, the distress was increased; besides which he felt a violent pain in his two buttocks. So distressing was the pain that he begged they would cut the two pieces out, and in this he died.

“Upon opening the belly, immediately appeared a considerable quantity of extravasated blood, lying loose among the bowels, which was in part coagulated, and which, when collected, measured full two pints and a half.

“The spleen was found to be a mere pulp, with its coat separated from its substance, between which was a good deal of blood; but the coat was burst, so that the blood which was found in the cavity of the belly had come from the spleen, and had escaped by this opening. Every other viscus within the belly was to appearance sound, and no other appearance of ruptured vessels anywhere.

“The contents of the chest were to appearance perfectly sound, only about half a pint of bloody serum was found in its cavity.

“The whole vascular system was almost free from blood. The cavities of the heart could only be said to be bloody. Neither the pulmonary artery nor aorta had any blood in them: the large veins were free from it, not the least coagulum in any of them, although the blood in the abdomen had a good deal of coagulum in it.”—*Hunterian MS. : Cases and Dissections*, No. 73. *Part of the case is also recorded in the “Cases in Surgery,”* p. 166; and another part in the *“Dissections of Morbid Bodies,”* No. 175.

3102. A portion of the popliteal artery of a man in whom the superficial femoral artery of the opposite limb was tied for the cure of a popliteal aneurism (the tied artery is preserved in No. 3083). This artery shows the morbid changes which most commonly precede the formation of aneurism. In a portion of it, about two inches long, and both above and below which it appears completely healthy, the internal coat is thickened irregularly and in patches; it is thus rendered from half a line to a line in thickness, opaque white, and tough; its inner surface is superficially tuberculated, coarsely wrinkled, and, in parts, like the surface of a

contracted and wrinkled cicatrix. In two small patches of the internal coat thus diseased there are yellow-ochre-coloured deposits of fatty matter beneath the surface. The upper and lower boundaries of the diseased part of the artery are distinctly marked, by the contrast between its pure white and the pale yellowish tinge of the adjacent healthy artery, as well as by a raised border formed by the thickening of the inner coat. The middle coat of the diseased portion of the artery appears healthy, except in that it is a little thicker than elsewhere, and its connection with the internal coat seems loosened. The external coat, in an extent exactly corresponding with that of the disease of the internal coat, is thickened, indurated, consolidated, and confused, as if by adhesive inflammation, with the tissue around it*.

Hunterian.

3103. Part of the arch of an aorta. Its inner coat has been reflected, and is thickened, dense, rigid, white, and nearly opaque. It is variously spotted and mottled with fatty deposits in its substance, in which, also, near the origins of the great vessels, plates of earthy matter lie imbedded. The layer of the thickened inner coat, which is internal to these plates, is irregularly cracked; they appear, also, to have imbedded themselves in, and produced some disease of, the inner layers of the middle coat.

Hunterian.

3104. A similar smaller specimen, the dissection of which appears to have displayed the fatty and earthy substances deposited as abundantly in the inner layers of the middle coat, as in the internal coat, of the artery. But at the margin of the section through the coats of the artery, an opaque-white line may be seen internal to the brownish-yellow layer which is formed by the middle coat. It is, therefore, not

* Nos. 3243 and 3245 in this Series are aneurisms of the two popliteal arteries of another patient. Parts of these popliteal arteries are symmetrically diseased in exactly the same manner as the artery described above; and it is very probable that the other popliteal artery of this patient, before the formation of the aneurism, was diseased in the same manner as the one above described.

improbable that the morbid deposit, which appears to be situated in the inner layers of the middle coat, is really in part situated in those outer layers of the inner coat which, while the rest were reflected, retained their connection with the middle coat.

Hunterian.

3105. A similar specimen, in which, as in the preceding, the thickened internal coat appears to be incompletely reflected.

Hunterian.

3106. Section of the first part of the arch of an aorta, showing, on its cut edge, the extent to which a deposit of the morbid substances already described extends ; namely, that it occupies the whole thickness of that part of the thickened and opaque internal coat in which it is seated, increasing its apparent thickness, and raising its internal surface, so as to make it look tuberculated ; while the middle coat, though impressed by the morbid deposits accumulated in the inner coat, is not itself the seat of any of the like kind.

Hunterian.

3107. Another section of the same artery, exhibiting the same appearances.

Hunterian.

3108. Parts of an iliac and femoral artery, of which the coats are dissected, and show a large quantity of fatty and earthy matter deposited in the substance, and especially in the deeper part, of the thickened internal coat. Parts of this coat, where the morbid deposits are most abundant, are nearly a line in thickness. The middle and external coats appear healthy : they may be clearly traced at the cut margins of the upper specimen.

From the Museum of Sir A. P. Cooper.

3109. " Part of an aorta, where ossification is coming on. It was steeped in an acid, but without any effervescence, so that this white appearance takes place before earth is

deposited" (*Hunterian MS. Catalogue*). By the "white appearance" Mr. Hunter probably meant the opaque-white thickening of the internal coat at the seats of the chief deposits of fatty matter.

3110. The arch of an aorta, with part of the descending aorta, in which there are numerous deposits of fatty and earthy matter. The coats have been dissected in two places, but the situation of the morbid deposit is not in these parts well shown; at the cut margins of the specimen it appears to be in the internal coat alone. The specimen serves better to display the morbid state of the free surface of the inner coat commonly connected with this disease. The surface of this coat (which is in many places more than a line in thickness) is elevated in small patches by the deposits beneath it, so that it is wrinkled and superficially tuberculated: in the depressions between these elevations it is more minutely wrinkled and seamed, like the surface of an uneven cicatrix. In colour the surface is, in a few small patches, opaque white: in some parts it is glistening, bluish or greyish white; but the greater part presents various shades of buff, ochre-yellow, and brownish colours, derived from the morbid deposits immediately beneath it.

Hunterian.

3111. An exactly similar specimen, from a thoracic aorta. In some places it shows how the fatty deposit commences, in the form of groups of minute yellow points, or dots, so thickly set as to give the appearance of a uniform yellowish spot.

Hunterian.

3112. A similar specimen, showing the further progress and consequences of the cracking or tearing of the thickened internal coat over the chief collections of the morbid deposit. This tearing has taken place at the lower part of the abdominal aorta, where the morbid deposit, consisting chiefly of fatty matter, is accumulated in the greatest quantity, and occupies the greatest part of the thickness of the internal coat. Over several patches of such accumulated

deposit the remaining internal layer of the internal coat appears to have been torn, and then to have been removed, as if by ulceration. Thus there are exposed shallow cavities in the arterial coats, oval in shape, but with irregular outlines, like the cavities of ulcers, except that there is no appearance of vessels or blood in or near them. These cavities open into the canal of the artery by wide orifices, whose margins are formed of the remains of the thickened internal coat, irregularly destroyed, and overhanging their bases. They contain some remains of the fatty deposits attached in a thin layer of yellowish granular-looking matter to their bases; but much of this material must have been discharged from them into the blood. *Hunterian.*

3113. The lower part of an abdominal aorta, with the two common iliac arteries, extensively diseased in the same manner as the specimen last described. In this, however, the opaque-white thickening of the internal coat is better shown than in them, and the deposit of earthy matter is more abundant, in the form of thin, oval and round, concave, bone-like plates of yellowish colour, variously shaded, and smooth and shining on their internal surfaces. *Hunterian.*

3114. The lower part of an abdominal aorta, with the common iliac arteries. Fatty and earthy matters are so abundantly deposited in the thickened internal coat that, through nearly the whole extent of the arteries, there is a space between the remains of the internal coat and of the thinned and wasted middle coat; which space appears to be filled with soft and grumous fatty matter. In some places, also, as at the orifice of the left iliac, and through nearly the whole length of the right iliac artery, the accumulation of the morbid deposit has so elevated the inner surface of the vessels that their calibre is reduced to one half.

Hunterian.

3115. A similar specimen, except that the disease has made less progress than in either of the three preceding. In this are shown, at the lower end, as usual, the most diseased part of

the abdominal aorta, several plates of earthy matter, like those last described, which extend to the very surface of the thickened internal coat. Thus the central parts of their surfaces lie exposed, or covered only with an exceedingly thin and transparent pellicle, on the inner surface of the artery ; and they look like macerated and dried scales of bone, spotted and shaded with yellow. The edges of most of them are still imbedded in the thickened internal coat, near its surface ; and they are so curved that they do not interfere with the roundness of the artery ; but the edge of one of them has torn through the adjacent lining of the artery, and projects into its canal, as many of the similar plates in the specimen last described do. *Hunterian.*

3116. Parts of the arch of an aorta, and one of the carotid arteries, showing many of the successive stages of the disease illustrated in the preceding specimens. In many places, particularly at and near the origins of the great brachio-cephalic trunks, small spots or patches of the internal coat of the artery are thickened, elevated, and opaque white ; so that the internal surface of the artery looks as if thin pieces of coagulated albumen had been laid upon it. The intensity of the opaque whiteness thus produced is various, being proportionate to the degree of thickening of the internal coat. Around the orifices of the innominate and the left carotid there are rings of opacity, which, like the patches, are gradually lost sight of in the adjacent parts of the arteries : on some parts of the aorta the opacity is in delicate undulating white lines, directed in the course of the flow of blood ; in other parts the opacity is diffuse and uniform. Most of these patches of opacity exist alone, without either fatty or earthy matter ; but at the origins of the left vertebral and subclavian arteries, and in the concave part of the arch opposite to them, there are circular, concave, thin plates of earthy matter, like bone-scales, imbedded with fatty matter in the thickened internal coat. Some of these lie deep, and are obscurely seen through the opaque tissue ; some lie superficially, so that they appear quite exposed ; one has broken through the membrane over it, and its edge

projects into the canal. At the bifurcation of the carotid artery such deposits are abundant ; and many points of earthy matter project into the canal of the artery.

Hunterian.

3117. The arch and thoracic portion of an aorta, dilated, and having a very abundant deposit of earthy matter in their coats. They have been dried, and the exact seat of the morbid deposit cannot be discerned ; but it occupied the internal layers of the walls of the artery, and in many places projected into its canal. The deposit has, in every part, the form of plates varying from extreme thinness to the thickness of a line ; they, for the most part, affect a circular or oval outline, but their borders are irregular and jagged ; they are from a line to an inch in diameter, but some of the larger appear made up of several smaller plates, which have coalesced, but preserve traces of their original outlines. By such coalescing of numerous plates of the deposit, the greater part of the right and upper wall of the first portion of the arch looks like a uniform and continuous layer of bone. All the plates are curved in adaptation to the round form of artery : their outer convex surfaces are uneven, rough, and coarsely granular with many prominences : their internal concave surfaces are, for the most part, smooth, though not polished. But, in many places, smaller plates of earthy matter appear to have been laid on the inner surface of the larger plates, making this surface as rough as the outer ; and on the right wall of the arch of the aorta, the inner surface of the morbid deposit is covered with a very uneven layer of earthy matter, as if coarse granules had been heaped one over the other on the originally smooth plates.

From an old man who died with dropsy.

From the Museum of Robert Liston, Esq.

3118. A similar specimen, with still more extensive deposits of earthy matter. At the upper part of the thoracic aorta the deposit is so accumulated that the walls of the vessel (which are here also dilated) appear composed of a continuous tube

of bone, perfectly rigid, unyielding, and brittle, but with a nearly smooth and uniform internal surface.

From the Museum of Sir A. P. Cooper.

3119. Part of an abdominal aorta, with the iliac, splenic, and some other arteries (probably parts of those of a lower extremity), dried. There are numerous deposits of earthy matter in the walls of them all. Those in the aorta and common iliac arteries are in the form of scattered plates; but in the splenic and the other smaller arteries they are like portions of narrow rings encircling the vessel. Such rings are arranged with various degrees of closeness; in some parts they are distinct, and placed at nearly regular intervals; but in others they are confused, and form a continuous layer transversely marked. *Hunterian.*
3120. Thin plates of compact earthy matter from the walls of an artery. *Hunterian.*
3121. Section of the left ventricle of a heart and part of the aorta, exhibiting several small deposits of fatty and earthy matter in the internal coat of the aorta, above the attachments of the aortic valves. The chief deposits lie in transverse lines extending between the angles of the several valves, at the level of their free margins. *Hunterian.*
3122. A similar specimen; the morbid deposits occupy the same positions. *Hunterian.*
3123. The arch of an aorta, in the walls of which there are numerous deposits of fatty and earthy matter. They are especially abundant at the angles, and at the level of the free margins, of the valves, and in the concavity of the arch, about the attachment of the ductus arteriosus and where the left bronchus passes under it. They lie immediately beneath the internal surface of the artery, and the membrane over them is in some places cracked, so as to expose their edges. The aortic valves are thickened and opaque. *Hunterian.*

3124. The arch of an aorta, with the trunks of the coronary arteries. There is an abundant deposit of fatty and earthy matter through the whole extent of the thickened internal coat of the aorta. All the coats appear thickened, and in some degree dilated; and the inner coat is uneven, tuberculated, and in many places cracked, over plates of earthy deposit. The aortic valves are slightly thickened. There are abundant deposits of earthy matter in the trunks of the coronary arteries, rendering them completely rigid.

Hunterian.

3125. The arch of an aorta, inverted and dried, exhibiting numerous close-set plates of earthy matter deposited in the first portion of it. The edges of most of them project from the walls of the artery into its canal; but this state may have been produced in the preparation of the specimen.

3126. The arch of an aorta, from an old woman, dilated and converted into an almost uniformly rigid bone-like tube, by the deposit of plates of earthy matter laid together like pavement. The preparation is dried; and the small extent of the coats which remain free from the morbid deposit is shown by the few parts that are transparent.

From the Museum of John Howship, Esq.

3127. The arch of an aorta, with numerous deposits of earthy matter in its coats.

Hunterian.

3128. Portion of a thoracic aorta, exhibiting several opaque whitish deposits beneath its internal surface, near and between the orifices of the intercostal arteries.

The preparation is figured in Mr. Crisp's work on the Blood-vessels, pl. iii. fig. 4.

Presented by Edwards Crisp, Esq.

3129. A thoracic aorta and its branches, including one coronary artery, which lies detached at the bottom of the glass.

Extensive calcareous deposits cover the inner coat of the coronary artery and of the aorta beyond the left common carotid. The first portion of the aortic arch is but little affected.

*From the Collection of the late Joseph
Hodgson, Esq., 1869.*

3130. The injected and dried arch and thoracic portion of the aorta of a man who had aneurisms of both popliteal arteries. The aorta is very slightly and irregularly dilated, and has small plates of earthy matter in its coats.

Hunterian.

3131. The rest of the aorta, and the iliac and femoral arteries of the same patient, similarly diseased, but in a very small degree.

It is probable that these two specimens are from the same patient as Nos. 3243-4-5.

Hunterian.

3132. An abdominal aorta, with the common iliac arteries, dried. They present through their whole length numerous thick, oval, and quadrilateral plates of earthy substance in their coats. There is one very large plate at the beginning of the aorta: similar plates are very numerous and close-set through the whole length of the thoracic aorta; few and small in the abdominal aorta about the origins of the celiac and mesenteric arteries; but again numerous and large near the lower part of the aorta, and in the trunks of the common iliac arteries.

From the Museum of Robert Liston, Esq.

3133. Part of the arch and descending portion of an aorta, with numerous thick irregular plates of earthy matter imbedded in its coats. They are nearly equally abundant in all parts, as far as the lower part of the abdominal aorta; there they are larger and more numerous than in any other part.

From the Museum of Sir A. P. Cooper.

3134. The lower part and bifurcation of an aorta, dried, and exhibiting extensive and thick deposits of earthy matter in its coats. *From the Museum of Sir A. P. Cooper.*

3135. The lowest portion of an abdominal aorta, with the common iliac arteries, dried. They exhibit large deposits, in the form of plates, of earthy matter in their coats.

From the Museum of John Howship, Esq.

3136. Part of one of the external iliac arteries, from the same patient, with similar earthy deposits arranged in narrow rings.

From a woman, 77 years old, who died with gangrena senilis. A year before her death she had an ulcer on her leg, which healed in a few months. Then the foot and lower part of the leg inflamed, and three months before her death her toes mortified.

From the Museum of John Howship, Esq.

3137. Part of a femoral artery, the internal coat of which is remarkably corrugated, and has small particles of earthy matter deposited in it. *Hunterian.*

3138. The large arteries of a man, 50 years old. All of them have earthy matter more or less copiously deposited in their coats. The femoral arteries and all their branches, which have been removed nearly as low as the ankles, are made rigid, and like tubes of bone, by close-set narrow rings and uneven plates of the earthy matter; and the brachial, radial, and ulnar arteries are in their whole length similarly and almost as much diseased. The disease prevails as extensively in the lower part of the aorta, and in the trunks of the coeliac, mesenteric, and iliac arteries; but in the rest of the aorta the deposits of earthy matter are few and widely scattered.

From the Museum of Robert Liston, Esq.

ANEURISMAL DILATATION AND ANEURISM*.

3139. The arch and thoracic portion of an aorta, generally dilated and elongated. The chief enlargement is between the origin of the aorta itself and the origin of the innominate. This part of the trunk is nearly six inches long, and at its largest part three inches in diameter. It gradually attains this size, dilating as it proceeds onwards from its origin to about the middle of its course; then it again slowly diminishes, and at the origin of the left subclavian artery its diameter is about one inch and a half. The inner coat of the aorta is thickened, opaque white, and indurated; its internal surface is tuberculated, irregularly wrinkled and cracked, with thick-set deposits of fatty and earthy matter in and beneath its surface. The large brachio-cephalic trunks are, though in a less degree, similarly diseased and dilated. *Presented by — Thompson, Esq.*

3140. A heart, with its large vessels and some of the adjacent parts, dried. The aorta is in two situations greatly dilated. The first dilatation occupies the whole of the arch of the aorta, and affects alike its length and its whole circumference; it has an irregularly oval and somewhat sacculated form, and measures about seven inches in length and four inches in diameter. The trachea, right pulmonary artery, and vena cava superior are compressed by it. Earthy matter is deposited in small spots in its walls: the great brachio-cephalic trunks proceed from its upper part. After this dilatation, which both begins and ends almost abruptly, the aorta, for the length of an inch and a half, has a diameter of an inch and a quarter; and after this it is again uniformly but gradually dilated to a diameter of upwards of two inches. This second dilatation continues to the part at which the aorta passes through the diaphragm; then, presenting the shape of a *fusiform aneurism*, gra-

* N.B. The specimens in this Subseries are arranged in such a manner as to illustrate, first, the mode of formation and the chief varieties of aneurism; and afterwards the aneurisms of particular arteries are placed together. See Index, p. 356.

dually ceases ; and beyond this the vessel has its natural size. The heart and the other large vessels are of ordinary size.

From the Museum of Sir A. P. Cooper.

3141. Part of an abdominal aorta, with the common iliac arteries. The lower part of the aorta is dilated in its whole circumference, but especially in its anterior wall. The dilated part measures four inches in length, and about two inches in its chief diameter. The dilatation both begins and ceases gradually ; and at a short distance, both below and above the sac, the artery appears healthy. All the coats of the aorta are dilated to form the sac ; at its upper part they are dissected from each other in three layers, but lower down they appear too closely united for this to be effected. The inner coat lining the sac is superficially tuberculated, and at the cut margin of the back of the sac appears very thick, tough, and coarsely laminated. There are abundant deposits of fatty matter beneath its surface, but no coagula attached to its interior. Anteriorly the sac burst by a long irregular rent through all its coats. Death soon followed the hæmorrhage.

The preparation is engraved in Mr. Liston's 'Elements of Surgery,' p. 141 (edit. 2: London, 1840).

From the Museum of Robert Liston, Esq.

3142. Part of a femoral artery, from the same patient as the preceding specimen. A small round aneurismal dilatation, an inch in diameter, is formed by the equal enlargement of the whole circumference and of all the coats of the superficial femoral artery, an inch below the origin of the deep femoral. The cut margins of the sac show that the internal coat of the dilated part of the artery is irregularly thickened, and has abundant yellow deposit in thin layers beneath its surface : the middle coat appears thinner than is natural ; the outer of unusual thickness, but indurated. The rest of the artery is of ordinary size, and appears healthy.

From the Museum of Robert Liston, Esq.

3143. The popliteal artery, from the opposite limb of the same patient. Its whole circumference is equally dilated into an

elongated oval sac, three inches and a half in length, and nearly two inches in diameter. The walls of the sac are thickened; at some parts its interior is uneven, and there are some thin layers of coagulum within it.

From the Museum of Robert Liston, Esq.

3144. The arch of an aorta, generally and considerably dilated from near its origin to the root of the left subclavian artery. Earthy matter is thickly deposited in its coats. *Hunterian.*

3145. Part of a heart, with the first portion of the arch of the aorta. The whole circumference of the artery, from immediately above the valves to the origin of the innominata, is almost uniformly dilated in an aneurism nearly three inches in diameter. The sac is empty; its walls are a quarter of an inch thick, coarsely laminated, and very firm; there is a small low pouch, or secondary dilatation, just elevated from its posterior and upper wall. The internal surface of the sac is irregularly tuberculated, but polished and lined throughout by a continuation of the internal arterial coat, which is so thickened that it forms the greater part of the whole thickness of the sac. At the origin of the arteria innominata, the aorta regains its ordinary diameter.

From a plethoric man, 38 years old, who died suddenly. He was a drunkard, and long suffered with cough and dyspnoea. Blood was effused in large quantity in the pia mater.

From the Museum of George Langstaff, Esq.

3146. The arch of an aorta, the coats of which are thickened, consolidated, and on their internal surface unevenly tuberculated. The artery is generally dilated, and in two places its walls have yielded more than elsewhere, forming small wide-mouthed aneurismal pouches projecting beyond the general dilatation. *Presented by Sir Everard Home.*

3147. A section of the arch of an aorta, exhibiting an irregular aneurismal dilatation extending from an inch above the valves to the commencement of the descending or thoracic aorta. The dilatation appears to have occupied all the

circumference as well as the whole length of this part of the artery ; but, both before and beyond the situations mentioned, the artery has its natural size, and the dilatation commences and ends abruptly with well-defined borders, like those of the mouth of an aneurism. The dilated part of the artery measures in its greatest calibre between two and three inches in diameter, and its length is about nine inches. The internal surface of the dilatation is uneven, superficially tuberculated, and opaque, and there are abundant deposits of fatty and earthy matter beneath it ; all the arterial coats are dilated together, and at the back of the preparation are dissected into three layers ; here also are shown two small pouches pushed outwards from the general dilatation. In the distal part of the dilatation a large quantity of laminated coagulum appears to have reduced the channel for the blood to the ordinary size of the aorta ; and some of this coagulum extends into the left subclavian artery and fills its cavity. The orifice of the aorta and its valves are healthy.

Hunterian.

3148. The arch and part of the thoracic portion of an aorta. They are generally, but not uniformly, slightly dilated. On the upper wall of the arch, about half an inch before the origin of the innominata, is a conical round-topped pouch, about half an inch high, communicating with the aorta by a mouth rather more than half an inch in diameter. This pouch appears to be formed by a dilatation of the inner and middle coats alone of the artery, for its walls are very thin and transparent, and the external coat of the artery appears to cease at its base : if any of the external coat be continued over the pouch, it is only an exceedingly thin layer. The rest of the internal surface of the artery is rendered very irregular and tuberculated by thickening of the internal coat and fatty deposit beneath its surface ; and it is in many places deeply puckered-in, and depressed in very small irregularly shaped pouches, which are just visible externally.

From the Museum of Robert Liston, Esq.

3149. A heart and aorta. The whole length of the trunk of the aorta, from the situation at which the ductus arteriosus is

attached to it, to within two inches of its bifurcation, is enormously dilated. It measures from two inches and a half to four inches and a half in diameter, and has in several places large pouches projecting beyond it. Its coats, also, are very thick, and have fatty and earthy matter abundantly deposited in them. The heart is enlarged. The part of the aorta between the heart and the junction of the ductus arteriosus is somewhat above the average size; at and about that junction, just before the beginning of the great dilatation, it appears to have been contracted. There is a large aperture leading through a part of the left pleura into the upper part of the dilated aorta, as if the aneurism had burst there.

From the Museum of Sir A. P. Cooper.

- 3150.** The aorta of a Turtle, in which, without any obvious morbid change of structure, a small conical aneurism is formed by dilatation of a portion of all the coats. The base of the cone is formed by the mouth of the aneurism, and one of its borders projects a little, like a narrow semilunar valve. *Hunterian.*

- 3151.** The first portion of the arch of an aorta, the inner coat of which is thickened, irregular, and contains numerous small deposits of fatty and earthy matter. The outer coat appears indurated. In two situations, immediately above the semilunar valves, there are small pouch-like, or coniform, dilatations of the coats, just discernible externally. *Hunterian.*

- 3152.** Part of an abdominal aorta, with a portion of the sac of a very large aneurism of its trunk. (The rest of the sac is preserved in 3153). The sac is formed by the dilatation and growth of a small and exactly circumscribed oval portion of the posterior wall of the aorta, just above the origin of the coeliac artery. The rest of the circumference of this part of the aorta, even to the margins of the mouth of the sac, and the trunk both above and below it, appear perfectly healthy. All the coats of the artery appear to

have expanded, and been alike dilated in the formation of the sac. The internal coat begins first to show disease at the mouth of the sac, which mouth is only an inch and a quarter in its chief diameter, the sac itself having diameters of seven and nine inches. At this part the internal coat is slightly thickened and opaque white, but not so thickened as to form a prominent lip around the margin of the mouth. Within the sac the internal coat is perfect, but deeply wrinkled and tuberculated by patches of opaque-white thickening. In the depressions between its wrinkles there are portions of laminated coagulum. The middle and external coats of the artery are traceable on the cut edges of the sac, but the former appears very thin and rather dark-coloured. The anterior wall of the sac is closely united to the posterior wall of the aorta, over which it extends both above and below its mouth. *Hunterian.*

3153. Part of the chest and spine, from the same case as the preceding specimen. The rest of the sac, preserved in this preparation, is of an oval form, and measures nine inches and seven inches in its chief diameters. Projecting downwards and backwards, it has produced absorption of parts of the last two ribs on the left side, and of the last four dorsal and the first lumbar vertebræ. The portions of aorta above and below the sac have been injected, and, like the portion from which the sac projected, appear quite healthy. *Hunterian.*

3154. The thoracic aorta, with parts of the arch and abdominal aorta, of a young man. Two portions of the posterior wall of the trunk of the aorta, where it passes between the crura of the diaphragm, and just above the origins of the phrenic arteries, are suddenly dilated into two aneurismal sacs, which, lying close together, and being united by the adjacent tissues, appear externally as one flattened spheroidal tumour, about four inches in diameter, and attached by a narrow base to the back of the artery. The orifices by which the sacs communicate with the cavity of the aorta, and which represent the portions of its wall by the dilatation and growth of which the sacs were severally

formed, are between one half and three fourths of an inch in diameter, oval, smoothly and roundly bordered, and about one fourth of an inch apart; the partition formed by the portion of aorta remaining undilated between them, as well as some of the immediately surrounding part of the aorta, has its internal membrane wrinkled, tuberculated, and thickened with opaque-white patches and deposits of fatty matter. The sacs appear nearly filled with layers of coagulum; the upper one has burst through an oblique rent on the left side. The trunk of the artery, both above and below the aneurisms, appears perfectly healthy.

Presented by J. B. Sharp, Esq.

3155. The base of a heart, with the arch of the aorta, a section of the sternum, and other adjacent parts. About an inch and a half above the free margins of the aortic valves, the anterior wall of the aorta presents the orifice of a large aneurismal sac. This orifice has an elongated oval form, and extends transversely across the wall of the artery; it measures nearly an inch in its chief diameter; its margins are smoothly rounded; the tissue adjacent to it within the artery is opaque white, but not otherwise changed. The aortic valves and all the rest of the artery appear healthy; even that portion which is nearest to the mouth of the sac is not dilated. The aneurismal sac is nearly spheroidal, and the smallness of its mouth gives it the appearance of being attached by a narrow pedicle to the wall of the artery; from above downwards, and from side to side, it measures in each direction about five inches; the several coats of the artery are so thinned and confused that they cannot be traced upon the section of the walls of the sac. The sac projects forwards and upwards; above and behind, it is in contact with the great arterial trunks, which proceed from the arch of the aorta, and its pressure has nearly obliterated the left subclavian; below, it is bounded by the pericardium; in front it is in contact with the sternum, which it has elevated to a distance of three inches from the aorta, besides making it unnaturally convex, and producing partial absorption of its substance. A great part of

the sac is full of firm laminated coagulum; and at the sternum its proper walls appear to have been completely removed.

Hunterian.

- 3155 A. Another section of the same parts, exhibiting an irregular opening in the tissues about the first rib, through which the aneurism burst. This section also shows that the laminated coagula are but loosely attached to the walls of the sac, and that their laminae are arranged in curves, nearly corresponding with those in which blood would flow as it passed from the narrow mouth into the larger cavity of the sac.

Hunterian.

3156. A heart, with the great vessels. The right side of the aorta, immediately above the semilunar valves, is dilated into a large globular sac, three inches in diameter. The walls of the sac are lined by firm laminated coagulum, from a quarter to half an inch in thickness.

From a seaman, 45 years of age. Symptoms of aneurism were first manifested about nine months before death. The tumour, pressing upon the sternum, caused absorption of a portion of that bone, and formed a prominence, visible externally, strongly pulsating, and covered only by the integument. The power of swallowing and speaking remained perfect; but there was great difficulty of respiration, except when in the sitting posture with the shoulders inclined forwards. Death took place suddenly, from rupture of the anterior portion of the sac at the line of its attachment to the sternum, with escape of a large quantity of blood into the left pleural cavity.

Presented by Sir Stephen L. Hammick.

3157. Preparations of the internal coat of the aorta, separated from the middle and external coat, to show that the internal was continued without interruption as the lining of several small fossæ, which indicate the very earliest stage in the formation of aneurism.

The portion of the descending aorta in which these small hollows were situated was removed from a man who died from the rupture of a small aneurism of the arch of the aorta into the left bronchus.

“ In this and the following preparation the internal coat has been separated by maceration from the subjacent tunics, so as to show

that it formed throughout the lining of the sacs. In the first and third (Nos. 3157 and 3159 to 3161) series of preparations, the middle and external coats still in connexion are also preserved, to show the intimate adhesion which had existed between all the tunics around the neck of the sacs, and the thinness, or entire absence, of the middle coat at their bases. The internal coat is thus seen to have been gradually dilated and protruded through the middle tunic, so as, in the last series of specimens, to come in contact with the external coat, leaving the bases of the sacs only protected by the internal and external tunics. These cases therefore afford examples of a kind of hernial aneurism, though unlike the cases described under that name by Dubois, Dupuytren, and Liston. The middle coat was apparently destroyed by atheroma. The specimens were removed from cases in which larger aneurisms were found. (See Trans. Path. Soc. vol. ii. p. 201.)

Presented by Dr. Peacock, 1876.

3158. Preparation of a similar nature, from the right common iliac artery. Higher up the vessel was a much more advanced aneurismal tumour, lining which also the internal coat could be traced continuously.

Presented by Dr. Peacock, 1876.

3159. Preparations showing small sacs, forming the commencement of aneurisms of the ascending portion of the arch of the aorta. The internal coat has been separated from the other tunics, to show its apparent continuity throughout the whole of the sac.

These specimens afforded a good opportunity of observing the mode in which the small sacs were produced. A very copious formation of atheromatous material had taken place in the layer of fibrous tissue between the internal and middle coats; and this was most extensive in the seats of the small expansions, where, also, it had softened into a diffuent grumous pulp. The internal coat being thus deprived of its external support, had been gradually protruded, so as ultimately in some places to come in contact with the external coat; while the fibres of the middle tunic were pushed aside or removed by absorption. (Trans. Path. Soc. vol. ii. p. 201.)

Presented by Dr. Peacock, 1876.

3160. The inner coat of an ascending aorta. It has been carefully removed from the middle coat. An inch and a half above the valves is an aneurismal pouch, about an inch in

diameter and half as deep. The coats were here loosely attached to the subjacent tissue, and were deeply infiltrated with blood. The middle coat, in connexion with the external, is contained in the same preparation, and shows the thinness of the middle coat at the seat of the aneurism, and the adhesion of the external coat to the pericardium at the fundus of the tumour.

From a man aged 30, who died in St. Thomas's Hospital in 1860. His history is given under 3210A. (Trans. Path. Soc. vol. xii. p. 72.)

Presented by Dr. Peacock, 1876.

- 3161.** A small aneurism at the root of the innominate artery. Clot is adherent to its inner surface. Externally, by separating the outer coat, the middle coat is shown to be deficient.

This and the preceding were prepared to illustrate the mode in which it is believed that aneurismal sacs form in the larger arteries as the sequence of acute inflammation. (See Trans. Path. Soc. vol. xii. p. 74.)

Presented by Dr. Peacock, 1876.

- 3162.** The base of a heart, with the large vessels, the trachea, roots of the lungs, &c. The greater part of the first portion of the arch of the aorta is dilated into an aneurismal sac nearly five inches in diameter, which projects to the right between the trunk of the pulmonary artery and the right auricle, pushing the former forwards and the latter far backwards and downwards. The dilatation commences at the orifice of the aorta, so that the left ventricle opens immediately into the sac; but the dilatation is limited to that part of the arch which lies within the pericardium, and, as the left side of this part is not involved in it, the length of the arch is scarcely increased. On the surface of the sac, as well as on that of the heart itself, the layers of pericardium are thickened and firmly adherent. The sac is nearly spheroidal; its internal surface is smooth, being lined with the internal coat of the artery, which appears in parts to be thickened and opaque. Thin layers of fibrinous

coagula are adherent to that portion of the sac which is most distant from the axis of the artery. The walls of the sac are little more than half a line in thickness, but are strengthened by the adherent pericardium. The valves of the aorta are slightly thickened and opaque; but they are pliant, and were probably efficient. Judging by the portions which remain of them, the ventricles of the heart nearly retained their ordinary dimensions. The left internal jugular, subclavian, and innominate veins are full of old coagula, on which they have contracted; their obliteration was probably the consequence of the pressure on their common trunk by the aorta pushed upwards and forwards by the aneurismal sac. The right jugular and subclavian veins are larger than is natural, but the vena cava superior is somewhat compressed by the sac.

Hunterian.

3163. The base of a heart, with the arch of the aorta and other great vessels. Immediately behind and above the right semilunar valve of the aorta is the mouth of an aneurismal sac, which projected towards the right side, pressing upon the right auricle and ventricle and the trunk of the pulmonary artery, and which at length burst into the cavity of the pericardium. The sac is spheroidal, and measures nearly three inches in its chief diameter; its walls are thin, and their interior is dark and rough, except around the mouth of the sac, where they are smooth, white, and shining, the internal coat of the dilated part of the artery being here perfect. A great part of the cavity of the sac is filled with laminated coagulum; its mouth is oval, smoothly bordered, and about half an inch in diameter. The sac has been laid open on the right side, so that the orifice by which it burst into the pericardium is not shown. A small aperture has also been made into it from the right ventricle, in the upper and posterior part of which it forms a large projecting tumour. The walls of the ventricle over this tumour are very thin, and for a wide extent are opaque-white. The posterior wall of the pulmonary artery is also pressed forwards by the sac, so that the orifice

of this vessel is narrowed, and its posterior valve, included in the compression, is adherent to its walls. Besides this aneurism, there is, just beyond the part at which the pericardium is reflected from it, a dilatation of all the coats of the lower wall of the aorta, forming a second irregular aneurismal sac. The rest of the aorta is in a slight degree generally dilated; many parts of its internal surface, especially those which are close to the aneurisms, are thickened and tuberculated. The arterial valves are rather thickened and opaque.

From a gentleman, 50 years old, of very full habit, who died suddenly. A large quantity of coagulated blood was found in the cavity of the pericardium.

From the Museum of George Langstaff, Esq.

3163 A. The arch of an aorta, on the ascending part of which is a large aneurism commencing a quarter of an inch above the attachment of the right and posterior semilunar valves. The sinuses of Valsalva, especially the posterior, are dilated. The aneurism involves chiefly the anterior and right side of the vessel, pressing below upon the base of the right ventricle and the right auricular appendix. Above, it terminates somewhat abruptly an inch and a quarter below the origin of the brachio-cephalic trunk. A large oval cavity is thus formed, its larger part being downwards, projecting into the right auricle immediately below the entrance of the inferior vena cava. On the left side of this projection, in the appendix of the auricles, there were two apertures, by which the cavity of the aneurism communicated with that of the auricle. They were both of sufficient size to readily give passage to a large bougie. In several of the sulci of the auricle, the septum between the aneurismal sac and the auricular cavity was so thin as to be completely translucent. The descending cava, though compressed by the aneurism and expanded over its side, was free from obstruction, though its coats were much thickened. The sac is calcareous at places. The arch of the aorta is dilated; and an inch and a quarter below the origin of the

left subclavian a second aneurismal pouch arises from the aorta, somewhat posteriorly.

From the body of a horsekeeper, aged 48, of intemperate habits. He was suddenly seized, while at work, with great prostration. His pulse became imperceptible, his extremities cold, and he had constant vomiting. His face was sallow and puffy, and the abdomen swollen. He died about eighteen hours after his seizure, and no further history was obtained. (Lond. & Edinb. Monthly Journal of Medical Science, 1845, p. 16.)

Presented by Dr. Peacock, 1876.

3164. The first portion of the arch of an aorta, with parts of the ventricles of the heart, the pulmonary artery, and other parts. The right and posterior two thirds of the walls of the aorta, through a length of nearly two inches above its valves, are dilated; and beyond this general dilatation, there are carried-out, by further but more circumscribed dilatation, two aneurismal sacs. The dilated portion of the artery has thus an almost multilocular form; the mouths of the secondary dilatations, or aneurisms, are very large, and have well-defined, rounded, and smooth margins. All the coats of the artery are equally dilated in every part; the internal coat is in many places opaque-white, and there are numerous small deposits of fatty and earthy matter beneath its surface. At the lower part of the dilatation the anterior aneurismal sac communicates with the pulmonary artery by an oval aperture, nearly half an inch in its chief diameter, with sharp and smooth margins, as if blood had for a long time flowed from one artery into the other. The opening in the pulmonary artery is close by the angles of two of the valves; their tissue, and that of the adjacent internal coat of the artery, are thickened and opaque-white, but the rest of the pulmonary artery is healthy. There are only two aortic valves: they are thickened and opaque, elongated and narrow, and the orifice of the aorta is dilated. The trunk of the aorta beyond the aneurism, and that part of the wall which is not dilated, appear healthy. *Hunterian.*

3165. The adjacent portions of an aorta and a pulmonary artery. There is an aneurismal dilatation of a large portion of the

right wall of the aorta immediately above the valves. A part only of the sac is preserved, to show two small smooth-edged apertures of communication between it and the cavity of the pulmonary artery. One of the apertures is round, and about a line and a half in diameter; the other oval, and three lines in its chief diameter.

The patient died with jaundice and dropsy. The disease here shown was not distinctly indicated during life.

Presented by Joseph Swan, Esq.

3166. A heart, with the roots of the large vessels, showing an aneurism of the aorta immediately above the aortic valves, projecting towards the right ventricle and into the septum. The pulmonary valves are normal; the aortic permitted regurgitation. The heart weighed $17\frac{1}{2}$ oz., the left ventricle being dilated; its muscular tissue was normal.

From a man, aged 38, who died of syncope shortly after two or three similar attacks; no history could be obtained, and he had never been subject to syphilis or rheumatism. The sac had not ruptured.

Presented by Dr. Goodhart, 1874.

3167. The arch of the aorta and its large branches, with the sternum, soft parts of the front of the neck, and larynx. The arch of the aorta is generally dilated; upon the anterior surface of its ascending portion is an oval opening, about an inch and a half in diameter, which communicates with a large sacculated aneurism. The aneurism projects forwards, and ascends in the neck beneath the sterno-hyoid and thyroid muscles, as high as the cricoid cartilage, where is a large opening, at which it had burst through the skin. The transverse portion of the arch of the aorta is compressed by the sac, and the left brachio-cephalic vein is obliterated. The posterior surface of the sternum is eroded, and forms part of the wall of the aneurism, which had also compressed the left lung. The left carotid artery is obliterated and contracted at a point half an inch below the cricoid cartilage, where a ligature had been applied, it contains a fibrinous coagulum only adherent at the seat of ligature.

There is no evidence that the internal coats of the artery were divided by the ligature.

The patient, a labourer, had had a pulsating swelling in the neck for nearly a year, when a ligature was applied to his left carotid artery in February 1872. "The symptoms due to the pressure of the aneurism at once abated." When seen in March 1873, he was in a very satisfactory condition; but in June 1875, after resuming his laborious occupation, a pulsating tumour, much larger than before the operation, projected above the sternum. The aneurism burst externally in September 1876. (See Trans. Clinical Soc. vol. v. p. 183, and vol. x. p. 96.)

Presented by Christopher Heath, Esq., 1877.

3168. A portion of the upper part of a thorax, with the aorta.

This is the seat of a large aneurism, for which the right carotid and subclavian arteries were ligatured. It is formed by a dilatation of the anterior, outer, and posterior walls of the ascending and transverse portions of aorta, the contour formed by the inner wall of the arch being unchanged. The right carotid and subclavian arteries are given off from a common point on the posterior surface of the aneurism; it is therefore probable that the innominate artery is involved in the aneurismal dilatation. The left carotid and subclavian arteries are given off immediately to the left of the sac. Anteriorly the aneurismal sac is in contact with the upper part of the sternum, which appears to have formed part of its wall. Its interior is completely filled with firm, laminated fibrin. A small aneurismal pouch projects from the posterior surface of the commencement of the ascending aorta. The right subclavian artery is obliterated in the third part of its course, but the common carotid is pervious throughout; the inner coats show no trace of division, there is no contraction of the vessel, and the only indication of the seat of the ligature is a ligamentous band attached to the outer coat. The right internal mammary artery courses around the outer surface of the aneurism.

From a prematurely aged man of 36 years. When examined, in February 1879, there was dulness on percussion and pulsation over the upper part of the right side of the thorax. Symptoms indicating pressure on the right bronchus were present. General treatment having proved of no avail in arresting the growth of

the aneurism, his right subclavian and carotid arteries were ligatured on Feb. 15th. The symptoms immediately and markedly decreased after the operation, and he recovered rapidly from its immediate effects. On May 12th, it was noted that he had improved, but still suffered occasionally from symptoms of pressure. He left the Hospital on June 2nd, and during the next year was frequently readmitted. The symptoms of "tumour on the left side of the chest slowly increased," and death took place in May 1880.

See Trans. Med.-Chir. Soc. vol. lxii. p. 393 (1879); and Mr. Barwell, "On Aneurism," p. 113.

Presented by Richard Barwell, Esq.

No. 3097 is an aneurism of the aorta for which the same operation was performed.

3169. A portion of the right side of the anterior thoracic walls, with the heart and great vessels, showing a large aneurism of the ascending part of the arch of the aorta, about six inches in diameter. By pressure forwards, the aneurism has caused absorption of the costal cartilages and portions of the ribs in front. The inner lining membrane is very rough, and the cavity contained chiefly soft dark clot with portions of cartilage and necrosed ribs. The right lung and pleura adhere to the sac posteriorly. The aneurism has not pressed on any of the great vessels, nor on the right bronchus to any appreciable extent.

Presented by Dr. W. Domett Stone, 1879.

3170. A heart, with the arch of the aorta and its branches, the trachea, a portion of the sternum, and other adjacent parts. There is a large aneurismal dilatation of the right, anterior, and posterior walls of the arch, extending from within an inch of the commencement of the aorta to the origin of the arteria innominata. The sac has enlarged in nearly equal degrees upwards, downwards, backwards, forwards, and to the right, and, in a rather less degree, to the left side. It presses upon the trachea and œsophagus, and has nearly obliterated the vena cava superior; anteriorly it forms a small tumour through the sternum, which it has also raised to nearly four inches from the aorta. The sac is laid open both in front and at the side of the sternum, and appears in great part filled with laminated coagulum. The aorta beyond the sac and its main branches appear healthy, except

for a slight general dilatation of a part of the thoracic aorta. The heart is enlarged, and is covered with an unusual quantity of fat. *From the Museum of John Howship, Esq.*

- 3170 A. A heart, with the arch of the aorta and the adjacent parts. Almost immediately above the valves the whole circumference of the artery, but especially the right half of the wall, is dilated into a large aneurismal sac. The dilatation extends as far as the origin of the arteria innominata, beyond which the aorta nearly recovers its natural size. The sac is nearly oval, and measures about five inches in its chief diameter. It is slightly constricted in the middle, in a circle which is indicated by portions of bristle, and which is formed by a ridge of the internal arterial coat, thickened, indurated, and opaque white, like the mouth of an aneurismal sac. It is probable, therefore, that there was at first a sacculated aneurism of part of the right wall alone of the aorta, and that subsequently the whole circumference and length of the first portion of the aorta were gradually dilated; whereby the former sac was carried outwards, and its mouth, greatly dilated, assumed the character of a constriction of the walls of a much larger sac. The walls of the sac are everywhere thin; the internal coat of the artery thickened, opaque white, wrinkled, tuberculated, and mottled with fatty deposits, lines the sac in every part, except in a few spots, where it has been removed over the most considerable deposits of fatty matter. Beyond the constriction the internal surface of the sac is thinly covered with laminated coagulum; externally, portions of its walls adhere to the lungs on each side, and to the outer surface of the pericardium below. The heart is enlarged in all its dimensions; the walls of its cavities are thin and pale, and abundantly covered with fat. *Hunterian.*

3171. The arch of an aorta, with parts of three left ribs. The first portion of the arch is dilated to more than twice its natural size; and an aneurism, formed by a large dilatation of its anterior wall, has come in contact with the partly ossified cartilages of the ribs. After producing the absorption of

one rib and the displacement of the others, it has projected between them. *Hunterian.*

3172. Part of the front wall of a chest, with a large aneurism of the arch of the aorta. The aneurism arises from the front wall of the aorta, just below the origins of the brachio-cephalic trunks, and the whole of the extra-pericardial part of the arch is dilated to more than twice its ordinary size. The aneurism, projecting forwards, has produced absorption of the cartilages and osseous ends of the first two left ribs, and of the left margin of the sternum, and has extended far beyond the walls of the chest. *Hunterian.*

3173. The base of a heart, with its large vessels, and a part of the sternum, and of the right anterior wall of the chest. There is a very large aneurism, formed by dilatation of three fourths, comprising the right, posterior, and anterior walls, of the first portion of the arch of the aorta. The dilatation extends every way, but chiefly forwards and to the right side, and the sac has made its way through the ribs, and forms a considerable tumour beneath and outside the right nipple. Posteriorly the sac has flattened and nearly obliterated the superior cava and the upper part of the right auricle, and has compressed, in a less degree, the right pulmonary vein and the left auricle. The walls of the sac are from one to three lines in thickness, tough, and coarsely laminated; they appear to be chiefly formed of the thickened and indurated internal coat. Parts of them being removed, its interior is shown nearly filled with laminated coagula, and some shreds like lymph. The coagula are especially compact at the anterior part of the sac, a portion of which is separately suspended, and in which there is a central cavity surrounded by the coagula, and extending from the main cavity of the sac nearly to the surface of the integuments of the chest. The rest of the arch of the aorta, and what is preserved of the heart, appear healthy, and of ordinary size.

The patient was a bricklayer, 34 years old. The signs of aneurism existed for four years before death, and were for a time

mitigated by repeated large bleedings. The beginning of the disease was ascribed to a strain in lifting heavy weights.

From the Museum of John Howship, Esq.

3174. A heart, with its large vessels, a portion of the anterior wall of the chest, and other adjacent parts. The whole circumference of the first part of the arch of the aorta, from just above its valves to the origin of the arteria innominata, is dilated into an enormous aneurism. The sac is irregularly conical, and elongated from before backwards; it measures in this direction nearly eight inches; its diameter near the aorta is three inches, and at the sternum about five inches. The dilatation extends every way, but chiefly forwards; here the sac passes through the sternum and the adjacent parts of the ribs of the left side, and forms a large tumour in front of the chest under the left mamma. The walls of the sac are very thin; it has been torn open in front and at the side, where it adheres behind the remains of the sternum. The interior of the sac is nearly smooth, and appears to be lined, at least over the greater part of its surface, by the dilated internal coat of the artery. It is constricted at the part where it passes through the sternum and ribs, presenting in this situation a smooth-edged circular orifice, by which its more distended portions without and within the chest communicate with one another. It contains a small quantity of fibrinous coagulum, and probably a large quantity has been removed. Posteriorly the sac has compressed the vena cava superior, and, in a less degree, the trachea, the pulmonary arteries, and the arteria innominata. Immediately beyond the sac the aorta has its ordinary size; the heart also appears healthy.

From a woman, 56 years old. The disease was many years in progress, but did not produce much distress till the last three weeks of life, when a sudden and considerable enlargement of the tumour took place, and produced great difficulty of breathing. The other arteries, and the organs generally, were found healthy.

From the Museum of John Taunton, Esq.

3175. A similar preparation, exhibiting an aneurism in the same situation and of the same general form, but of somewhat

larger size. The whole circumference of the first portion of the arch of the aorta is dilated, from within an inch of the valves to the origin of the left subclavian artery, and from this general dilatation there springs a secondary and partial, but much larger, dilatation of the anterior wall. This forms a great sac, which opens into the uniformly dilated part of the artery with a wide mouth, and extends forwards through the front and left side of the chest. The tumour thus formed in front of the chest under the left mamma is five inches in depth. The mammary gland appears to have been completely absorbed, for the wall of the sac is in close contact with the skin, and the skin itself is thin and nearly sloughing. A small ulcerated opening in the skin on the left side of the base of the tumour is marked with a portion of glass. The sac has been laid open from the right side : that part of it which is outside the chest is nearly filled with firm dark coagula ; that within the chest is empty, and its interior, formed by a continuation of the lining membrane of the artery, is superficially wrinkled. A large portion of the left lung is preserved adherent to the sac and compressed by it. The heart and the aorta immediately beyond the sac are of their natural size.

From a woman in whom the disease existed for fully nine years. Death ensued through repeated hæmorrhages from the small aperture in the base of the tumour mentioned above, and from a similar aperture in the opposite part of the base, which is not shown in the preparation.

From the Museum of John Howship, Esq.

3176. A sternum, with the ends of the ribs and the integuments and other tissues covering them, exhibiting a very large tumour, formed by the projection of an aneurism of the arch of the aorta. The anterior part alone of the sac is preserved ; it is nearly five inches wide, and has completely made its way through the middle of the sternum and the adjacent costal cartilages ; its walls are thin : it contains a large quantity of very compact laminated coagulum, loosely adherent to its interior ; and the lungs adhere to it externally on each side. The skin upon the front of the tumour appears to have been near sloughing : it is dull white, and the cuticle is separated from it.

3177. A large aneurism of the anterior part of the arch of the aorta immediately below the origin of the innominate artery. It has eroded the sternum, and protruded much forwards, so that one of the costal cartilages now lies in the sac, surrounded by coagulum. The cavity of the sac is completely filled by laminated clot. The rest of the whole arch is extremely diseased.

From a labouring man, aged 43, who continued his work until 48 hours before death.

Presented by John Gay, Esq., 1869.

3178. A section of the same aneurismal tumour, showing its effects upon the sternum, especially extensive absorption of the bone, whilst the costal cartilages are very little affected by the pressure. *Presented by John Gay, Esq., 1869.*

3179. The arch of an aorta, with the pulmonary artery, trachea, and other adjacent parts. An inch and a half from the aortic valves, and just beyond the reflection of the pericardium, the left and a part of the anterior and posterior walls of the aorta are dilated into a large flattened spheroidal aneurismal sac. The sac projects to the right upwards and backwards; it has compressed and nearly closed the trunk and right branch of the pulmonary artery, the arteria innominata, the vena cava superior and right auricle, and has pushed the trachea backwards and to the left side. The sac has a spheroidal form; its mouth is circular, abrupt, smoothly rounded, and extends from the reflection of the pericardium to the origin of the arteria innominata, of which the orifice is very narrow; its walls are a line in thickness, and the arterial coats can be traced in their cut edges, thickened, indurated, and coarsely laminated. The distal part of the cavity of the sac is filled with firm masses of laminated coagulum. The parts around the aneurismal sac are thickened and consolidated; the internal coat of the artery before and beyond the sac is half a line thick, hard, opaque white, coarsely wrinkled, and slightly tuberculated. The part of the aorta from which the sac proceeds is generally dilated in a slight degree, but immediately beyond it regains an ordinary size.

Hunterian.

3180. A heart with a large aneurism of the aorta. The aneurism, which projects straight upwards, is produced by dilatation of the upper wall of all that part of the arch of the aorta which lies between the reflection of the pericardium and the origin of the left subclavian artery. It measures more than three inches from above downwards; and since the innominate and left carotid arteries arise from a part of its wall, these must have been raised to an unusual height in the neck. There is an aperture in the upper wall of the aneurism, at which, probably, it burst. The part of the aorta which is below and opposite to the sac is slightly dilated; the part beyond the sac, and the heart, are, in external appearance, healthy.

Presented by Sir William Blizard.

3181. The arch of an aorta with two aneurisms. The first aneurism is a round one, nearly two inches in diameter, which projects forwards, outwards, and a little downwards from the right side of the arch, just beyond the reflection of the pericardium. It has a wide round mouth, and is nearly full of firm laminated coagulum. The mouth of the other and larger aneurism is above that of the preceding, midway between it and the origin of the arteria innominate. This sac is elongated, oval, and pouched; it extends upwards and outwards, on the right side of the innominate, and nearly parallel with it, to the under part of the clavicle, to which it is closely attached: it contains only a small quantity of coagulum. The rest of the aorta is made irregular on its inner surface by abundant fatty deposits and by thickening of its internal coat, but is of nearly ordinary size. All branches from its arch appear healthy.

Presented by G. J. Guthrie, Esq.

3182. A portion of a heart, with the great vessels and a piece of the sternum, showing an aneurism, the sac of which commences in the transverse arch, and projects forwards and upwards behind the sternum. The left subclavian artery was obliterated, but the carotid, though displaced and winding over the sac, is still pervious. The sac extends as far as the seventh dorsal vertebra, where the aorta abruptly

resumes its natural size. A cribriform perforation has occurred into the trachea just above the bifurcation. The heart was a little hypertrophied.

From a milliner, aged 54. She had been in the habit of drinking freely, but there was no history of syphilis.

The case is recorded in the 'Transactions of the Pathological Society,' vol. xxviii. p. 74.

Presented by Dr. Lediard.

3183. The arch of an aorta, with a large aneurismal sac proceeding from its posterior wall opposite the origins of the three great arteries. The whole of this part of the artery is dilated and elongated, so that the three trunks given off from it are unnaturally wide apart; there is also considerable dilatation of all the first portion of the arch, but in this part the dilatation is uniform. Posteriorly the aneurism opens into the trachea through a round aperture about three lines in diameter. The interior of the artery below the aneurism is uneven and tuberculated, but little if at all dilated.

From the Museum of George Langstaff, Esq.

3184. A preparation showing an aneurism of the upper and posterior aspect of the transverse part of the aortic arch, which has perforated the trachea an inch above its bifurcation. The aneurism is partially filled with coagulum, and the aperture leading into the trachea is thus temporarily closed. The roots of the great veins are displaced, the aneurism coming between the innominate and the left carotid, the orifice of which is narrowed, and the left subclavian is quite obstructed. On the right side the pneumogastric nerve is closely applied to the surface of the sac, where a large cardiac branch of the sympathetic is expanded; the left recurrent laryngeal nerve is also compressed beneath and behind the arch of the aorta.

From a woman aged 29, who died during an attack of spasmodic dyspnoea, after suffering from laryngeal symptoms for nine months, with repeated but not copious hæmoptysis. After death the lungs showed signs of extensive bronchitis and chronic lobar pneumonia. (See Trans. Path. Soc. vol. i. p. 240.)

Presented by Dr. Peacock, 1876.

3185. The arch of an aorta with the trachea. The posterior wall, and parts of the upper and lower walls of the arch, from the origin of the *arteria innominata* to the commencement of the thoracic aorta, are dilated into a large, elongated, transversely oval, and flattened aneurismal sac, which is partially filled with laminated coagulum. The sac pressed backwards upon the trachea, and burst into it, just above the bifurcation, with a small smooth-edged oval opening. The artery before and beyond the aneurism is slightly dilated; the trunks given off from the arch are healthy. The outer part of the sac, which was probably closely adherent to the left ribs, has been removed. *Hunterian.*
3186. A heart, with its large vessels, the larynx, trachea, and adjacent parts. A flattened, transversely oval, aneurismal sac is attached by a narrow neck to the posterior and upper part of the arch of the aorta. The sac measures about four inches in its chief diameter; it lies across the lower and front part of the neck; and opens with an oval mouth, half an inch wide, into the posterior part of the aorta, immediately below the origin of the *arteria innominata*. The sac pressed upon the trachea, narrowing its canal, and at length burst into it with a small irregular opening in its anterior wall, just above the bifurcation. A bristle is passed through the aperture, and the *oesophagus* has been turned aside for its more complete exhibition. Before the bursting of the aneurism its pressure upon the trachea, or upon the recurrent laryngeal nerve, appears to have caused symptoms of obstruction of the larynx; for laryngotomy has been performed in the crico-thyroid space. Below the aneurism, the inner surface of the artery is rendered slightly irregular by thickening and morbid deposits beneath it; beyond the sac the artery appears healthy, and is not dilated. The heart is slightly enlarged.
3187. A heart, with the large arteries. The entire length of the arch of the aorta is dilated into a large fusiform aneurism, which terminates abruptly at the point where the left subclavian artery is given-off. The walls of the portion of the artery forming the aneurismal sac are thickened, and the

inner surface is uneven and fissured, but is neither broken-down nor calcareous. Beyond the dilatation the coats of the artery appear perfectly healthy. The large arteries given-off from the arch are of natural size. The right bronchus is compressed by the aneurism. The heart is hypertrophied.

From a discharged soldier, aged 45, who "confessed to having had venereal disease, and to having drunk very freely." When admitted to Hospital, he had large rupial sores on the forehead, back, legs, and arms. A pulsating swelling projected on the right of the sternum, at the level of the second and third costal cartilages, and the physical signs of intra-thoracic aneurism were well marked. Dyspnoea was a prominent symptom. Death took place ten months after he came under observation, and fourteen after the first appearance of symptoms. (See 'Lancet,' 1876, vol. ii. p. 8.)

Presented by Frederick Ensor, Esq., 1876.

3188. The arch of an aorta, with the vena cava superior, trachea, and other adjacent parts. The greater part of that portion of the arch which is between the reflection of the pericardium and the origin of the left carotid artery is dilated into a round aneurismal sac, the interior of which is unevenly tuberculated, but not rough. The hinder part of the sac compresses the trachea, and opens into that canal through five small apertures in its mucous membrane, between one and two inches above its bifurcation. Into one of these openings a bristle is passed; through others small portions of the rings of the trachea are exposed. The portion of the aneurismal sac connected with and near to the trachea contains fibrinous coagula. The portion of the artery beyond the sac is of natural size, but its internal surface is irregular with atheromatous deposits.

The patient was a man 38 years old. For about five years before his death he had no pulsation in the arteries of the left arm; in consequence, it appeared, of contraction or obliteration of the left brachial artery, and of earthy matter and fibrinous clots partially obstructing the orifice of the left subclavian artery. Two days before death he expectorated a large quantity of florid blood, and had difficulty of breathing, with sense of suffocation. These were in some measure relieved, but returned shortly before his death.

Further particulars of the case are given in Mr. Crisp's 'Treatise on the . . . Blood-vessels,' p. 138.

Presented by Edwards Crisp, Esq.

- 3189.** The arch of an aorta, showing an aneurismal dilatation of its ascending and transverse portion. This dilatation communicates with the trachea by a narrow sinus. The aorta is thick, and its inner surface is rendered uneven by atheromatous and calcareous patches. The walls of the aorta and the trachea are not thinned near the point where they communicate, but the sinus appears to have commenced as a small ulcer on the inner surface of the aorta, permitting slow extravasation. The tracheal mucous membrane is much defaced by extensive cicatrices, probably of syphilitic origin.

From a middle-aged man, admitted into hospital in a state of syncope after severe hæmoptysis. He rallied, but died in a few days, after several similar attacks of hæmorrhage, during each of which he lost about a pint of blood. No previous history could be obtained.

Presented by Dr. Goodhart, 1875.

- 3190.** The arch of an aorta, with the larynx, trachea, œsophagus, and other adjacent parts. A spheroidal aneurismal sac, measuring about three inches in its chief diameter, is connected by a narrow base or neck with the upper and posterior part of the arch. The sac opens into the aorta with a round orifice half an inch in diameter, just behind and below the origins of the left carotid and subclavian arteries. Its walls, where its surface is free, are a line thick, tough, white, and coarsely laminated. Enlarging equally every way, the sac has pressed upon the left sides of the trachea and œsophagus. It has contracted the canal of the trachea, to the exterior of which its coats, rendered very thin by pressure, were intimately adherent. It has destroyed a part of the wall of the œsophagus, into which, after a large mass of fibrinous coagulum had been protruded into it, the sac appears to have opened through two narrow channels, indicated by portions of straw. The œsophagus at this part is somewhat dilated; in the rest of its length it is healthy. The interior of the aorta adjacent to the aneurism is thickened and tuberculated, but little if at all dilated.

Presented by Sir William Blizard.

- 3191.** Part of a chest, with a very large aneurism of the arch of

the aorta. The aneurism rises from the front and right wall of the arch, just below the origin of the arteria innominata, and the aorta adjacent to this part is generally dilated. The sac, the mouth of which is more than two inches in diameter, projects forwards and to the right side, nearly filling the upper part of this side of the chest, and making its way far forwards by producing absorption of large portions of the first, second, and third ribs, and of the side of the sternum. Portions of these bones, rough and ulcerated, project across the interior of the sac; above, it is in contact with the clavicle; in front, it projected several inches beyond the ribs; and there is an aperture in its posterior wall, through which, probably, it burst. *Hunterian.*

3192. The arch of an aorta, with portions of the pulmonary artery, trachea, œsophagus, and other parts. An aneurism is formed by dilatation of part of the lower and right wall of the arch of the aorta, nearly opposite the origin of the left subclavian artery. The orifice of the sac is irregularly oval and smooth, measuring an inch in its chief diameter; the sac itself has a somewhat greater diameter, and contains a large quantity of laminated coagulum. It has made especial progress downwards and backwards, passing behind and compressing the left bronchus, adhering to it and to the front of the œsophagus, and at length bursting into the latter through an irregular aperture about one third of an inch wide. The rest of the aorta is of more than its usual size; there are abundant deposits of fatty and earthy matter in its coats, and patches of the inner coat are thickened and opaque white. The œsophagus, except at the opening into it, is healthy, and so are the several other parts.

The patient, a man 60 years old, had cough and pain in the chest, and occasional difficulty of swallowing. Three days before his death he vomited a very large quantity of blood. This gradually ceased, but he voided blood from the intestines, and on the fourth day the vomiting of blood recurred, and he was suffocated.

From the Museum of George Langstaff, Esq.

3193. The arch of an aorta, with part of the trachea and adjacent bronchial glands. On the lower wall of the aorta

opposite, but a little beyond, the origin of the subclavian artery, close by the ordinary attachment of the ductus arteriosus, there is a small aneurism. The orifice of the sac is circular, about one fourth of an inch in diameter, with smoothly rounded margins; the exterior of the sac is firmly adherent to the bronchial glands and the adjacent part of the left bronchus. In the rest of the artery there are a few small deposits of fatty matter between the coats, but in other respects it appears healthy, and it is not in any other part dilated.

From a woman 23 years old, who died with phthisis. Tubercles and cavities were found in both lungs.

From the Museum of George Langstaff, Esq.

3194. A heart, with its large vessels. Immediately beyond the origin of the left subclavian artery, a part of the upper wall of the arch of the aorta is dilated into an oval aneurismal sac, about three inches in its chief diameter, and flattened behind and before. All the arterial coats appear to be continued into the sac, but its walls are very thin, it communicates with the aorta by a mouth as large as the canal of the aorta itself, and has no coagulum deposited within it: the left subclavian artery is closely adherent to its outer surface. The position of the sac of the aneurism, at the part where the arch of the aorta makes a sudden turn downwards, is such that the blood, after passing through the second or upper part of the arch, must have gone straight into the sac. Thus, the sac being constantly pressed towards the left, backwards, and a little downwards, its lower margin has come to press upon the lower part of the arch of the aorta about an inch beyond the part from which itself proceeds; and, by this pressure, the aorta has been made to bend abruptly at and near the part to which the ductus arteriosus is attached. The heart and all the rest of the aorta are of their natural size.

Presented by Sir William Blizard.

3195. A thin layer of coagulum, from an aneurism of the aorta; it adheres to a part of the sac. *Hunterian.*

- 3196-7. Other layers of the same coagulum. The fibrine in both specimens is remarkably firm, so that the surfaces of layers torn asunder appear like those of fibrous tissue.

The following record of the case was copied by Mr. Clift from one of the lost Hunterian Manuscripts:—

“ Case of Aneurism. ”

“ Thomas Norman, a private soldier in the 8th Regiment, aged 55, says he had been a very healthy man. While on duty, at the latter end of the year 1782, he accidentally fell down while lifting a very heavy load, soon after which he felt a severe pain in his left side, which would frequently shift to the other, attended with difficulty of breathing, cough, and sickness at the stomach, and at times spitting some little blood. He had a sense of weight and uneasiness in the chest, about the middle of the sternum, for which complaint he had been frequently bled, which gave him some temporary relief. Medicines of various sorts had been given to him without the least benefit; vomits never relieved his sickness; blisters had been as frequently applied, but to no purpose.

“ About two years and a half after this accident, and about six months prior to his decease, he discovered a very small tumour on his sternum, nearly in its centre, and about the size of the tip of his finger, which rebounded very forcibly against it. He now made application to his officers, and from this time he did no more duty. On his admission to Chelsea Hospital, about three months before he died, the tumour on his breast had increased, from the upper part to the lower, for five inches, and from side to side much about the same. The tumour kept increasing in size from this time, so that a day or two before his death the circumference of the basis measured twenty-six inches; during the last four or five days the upper part of the clavicle began to slough, and continually discharged a small quantity of blood. The slough increased, and the discharge necessarily increased likewise, till he died. It may be necessary to remark that his urine for the last six weeks was so very turbid as to take the appearance of a very strong decoction of bark.

“ In most aneurisms the patients date them from some exertion they had been making, and, at the same time, feeling a pain in the part. However, it is most probable that that which they suppose a cause is rather an effect, and that the aneurism had made some advances, but was only felt at the time of the exertion.”

3198. Part of a chest, with a very large aneurism of the arch of the aorta. Many of the great blood-vessels are injected. The whole length of the arch of the aorta is greatly dilated; it measures at one part three inches and a half in diameter, and is nearly seven inches in length; its coats are thickly

beset with earthy matter. The aneurism arises from the most dilated part of the arch, that is, from its upper and anterior wall, just in front of the origins of the brachiocephalic trunks. Making its way forwards and upwards, it has produced absorption of the upper third of the sternum, and of the cartilages and ends of the first three ribs on both sides. Within the chest the sac is four inches in diameter ; it is constricted where it passes through the sternum ; but beyond this it is enlarged to a diameter of five inches and a half, and projects three inches beyond the walls of the chest. In its upper part there is a large aperture, through which it burst, after sloughing of the skin. The clots in the two preceding specimens were taken from this aneurismal sac. *Hunterian.*

3199. A thoracic aorta, in the upper half of which there is a large aneurism. The dilatation affects the whole circumference of the walls of the artery, and extends from the origin of the left subclavian artery to within about three inches of the diaphragm. The form of the sac is oval ; but a large portion of it is dilated beyond the rest of its surface downwards and backwards. Its walls are thin, but consolidated externally with the lung and other adjacent tissues, which are firmly adherent to their outer surface ; its interior is rough and tuberculated and, at the lower part, is nearly full of laminated coagulum. At the anterior and lower part, the sac opens through a rent an inch long into the adjacent part of the left lung, which was firmly adherent to it, and is consolidated by blood effused into its texture. The left subclavian artery, arising from the aorta near the commencement of the dilated part, has its orifice nearly closed with a mass of fibrine ; a bristle is passed through the remains of its canal. The aorta, both before and beyond the sac, is generally, but slightly, dilated ; and, just before the large aneurism, presents two small pouch-like dilatations of its anterior wall.

From a strong man, 45 years old. He complained of cough and palpitation of the heart for some months, but the nature of his disease was not suspected. He died suddenly with copious hæmorrhage into the left pleura, the blood after filtrating into the lung

having burst through its anterior surface, at the part now more widely laid open. The aortic and mitral valves were extensively diseased, and the heart was enlarged.

From the Museum of George Langstaff, Esq.

3200. The greater part of a thoracic aorta, with a portion of the left lung. The coats of the vessels are abundantly studded with atheromatous and calcareous matter, and dilated in two places into globular aneurismal sacs. The contiguous surfaces of the aorta, aneurisms, and lung have become consolidated together. The smaller sac is on the posterior surface of the vessel, about three inches below the origin of the left subclavian artery. The larger one, directly opposite to the former, lies immediately beneath the left bronchus, with the interior of which it communicates by a large opening with ragged edges.

From a man, 27 years of age, who, having been previously in good health, had suffered for seven months from a violent throbbing sensation at the arch of the aorta and in the course of the carotids, with a feeling of thrilling, like the passage of water through the vessels. He had also a dry, irritating cough, but had not expectorated any blood until the aneurism burst into the bronchus, when not more than a pint of very fluid blood was thrown up by the mouth. The heart and valves were found to be healthy.

Presented by Sir Stephen L. Hammick.

3201. The arch of an aorta, with parts of the thoracic aorta, the spine, and the ribs. A large aneurism is formed by the dilatation of about four inches of the posterior wall of the upper portion of the thoracic aorta. The sac is of spheroidal shape, five inches in diameter, and flattened before and behind. It extends chiefly in the transverse direction, in the posterior mediastinum, across the front of the spine, and behind the pleuræ. It has produced absorption of the left sides of many of the dorsal vertebræ, and has made its way through the necks of some of the ribs, between which it projects in a small tumour beneath the deep muscles of the back. The walls of the sac are thin; they gave way just before death, and opened its cavity into the left pleural sac: nearly all the remains of its cavity are full of dark and firm

laminated coagulum. The aorta, both before and beyond the sac, is of ordinary size.

The patient was a woman, 26 years old. Obscure signs of the disease existed for a year; she died suddenly with intense dyspnoea.

From the Museum of John Howship, Esq.

- 3202.** The arch of an aorta, showing an aneurism involving chiefly its descending portion. It extends to the termination of the descending part of the arch, its walls are rather thin, and its cavity contains much laminated fibrine. There is considerable erosion of the vertebræ with which it is in contact; and it has opened into the œsophagus, and has flattened the left recurrent laryngeal nerve close to its origin.

From a costermonger, aged 32. For four months preceding his death, he suffered from bronchitis and fits of severe laryngeal spasm, with occasionally slight hæmoptysis. At length he suddenly brought up a great quantity of blood, and died in less than a minute. There was no history of syphilis. The case is recorded in *Trans. Path. Soc.* vol. xxviii. p. 75.

Presented by Dr. H. A. Lediard, 1877.

- 3203.** An aorta, with parts of the dorsal portion of the spine, the ribs of the left side, and the muscles and integuments of the back. A very large aneurism, formed by dilatation of about three inches of the left and posterior wall of the upper part of the thoracic aorta, has made its way between the third and sixth ribs, destroying all the tissues between them, and projecting in a deep and broad tumour under the integuments of the back, close to the left side of the spine. The tumour here formed is larger than that within the chest, circular and flattened, about three inches in depth and six in width. The integuments are healthy. The sac of the aneurism is entire, and covered on its anterior surface with healthy pleura. The artery both before and beyond the sac is somewhat dilated.

The patient was a Lascar, in whom the disease first appeared as a pulsating tumour in the situation of the left scapula, between two and three years before death. About a month before he died

his left leg and foot, and soon afterwards those of the right side, became gangrenous.

Presented by Sir William Blizard.

3204. A large aneurismal sac, springing from the thoracic aorta immediately above the diaphragm. The celiac axis and superior mesenteric arteries are seen in front, on a level with the lower part of the sac. This projects backwards, and has caused absorption of the bodies of four dorsal vertebræ. The orifice of the sac has a diameter of rather more than an inch. Calcified patches are seen over the greater part of the aorta. The spine is much curved, but its canal is not invaded. There was a small fusiform aneurism of the abdominal aorta.

From a woman, aged 76, who died with influenza.

Presented by Dr. Thurnam, 1871.

3205. An aorta, from its origin to the lower part of its abdominal portion, showing an aneurism below the pillars of the diaphragm. The sac is somewhat triangular, involving the front wall of the aorta; its orifice is circular, and about an inch in diameter. The pillars of the diaphragm are pushed forwards and expanded over the sides of the sac, whilst the central tendon passes round the upper part. The wall of the celiac axis is dilated and displaced; the aorta above the aneurism is atheromatous and tuberculated. The portion of the heart left attached to the aorta is healthy.

From a man, aged 33, subject to rheumatism, but without any history of syphilis. For more than two years before death he suffered from radiating pains in the back and left side, with numbness of his left leg. He died suddenly, whilst sitting up in bed; the sac was found to have ruptured into the left pleura, which was filled with blood.

Presented by Dr. Lewis Marshall.

3206. Part of an aorta, showing an aneurism near the termination of its thoracic portion. The wall of the aneurism is thin, and is lined throughout "with newly formed membrane," which bears a close resemblance to the lining membrane of other parts of the artery. The bodies of the

adjacent vertebræ have been partially absorbed, and the wall of the aneurism adheres very closely to their remains.

From a woman, aged 46, who had suffered from rheumatism seventeen years before death. The aortic valves were extensively diseased, and the cœliac axis was aneurismal at its base.

Presented by Dr. Peacock, 1876.

3207. Parts of a chest and spine, with two large aneurisms of the aorta. One, arising from the upper and back part of the first portion of the thoracic aorta, and making its way backwards, has destroyed the left sides of the first five dorsal vertebræ, and the adjacent parts of the third, fourth, and fifth left ribs, and has widely laid open the vertebral canal. The other, formed by a nearly equal dilatation of the whole circumference of the lower part of the thoracic aorta, and the upper part of the abdominal, has destroyed portions of the bodies of the last three dorsal vertebræ. Both the sacs have an elongated oval form, and are between five and six inches in length. The portion of aorta between them is dilated, but the portions before the first sac and beyond the second are of ordinary size.

3208. Part of an abdominal aorta, the lateral and posterior walls of which, through a length of about three inches directly above the bifurcation, are dilated into a large and wide oval aneurismal sac. All the arterial coats are dilated; the internal coat, where it lines the sac, is irregularly seamed and tuberculated; both it and the other coats appear to be thickened and to have soft fatty matter deposited in them. Above and below the aneurism the artery appears to be healthy. The anterior wall, opposite the great dilatation of the rest of the circumference of the artery, is diseased like the rest, but in a much less degree, and is not dilated. The right common iliac artery is reduced in size; the left is larger than is natural. *Presented by Sir William Blizard.*

3209. The lower part of an abdominal aorta, with the common iliac arteries. The aorta, from the origin of the inferior mesenteric artery to the bifurcation, is dilated in its whole

circumference into a large, oval aneurismal sac, obliquely elongated, measuring nearly five inches in length, chiefly projecting forwards, and presenting anteriorly a broad transverse uneven rent, by which it burst into the peritoneal cavity. There is also an aperture in the posterior wall of the sac, which was made in separating it from the vertebral column. Except at the anterior part, the walls of the sac are from two to four lines in thickness, dense and compact, so that it cannot be said of what tissues they are composed. The interior of the sac is exposed by the removal of parts of its walls; it is irregularly wrinkled, and appears to have contained little or no coagulum. Part of the vena cava inferior is attached to the exterior of the sac, but is not compressed by it. *From the Museum of John Howship, Esq.*

3210. Part of an abdominal aorta, with a large aneurism projecting from it near the origins of the superior mesenteric and coeliac arteries. The sac, which is formed by dilatation of a small circumscribed portion of the posterior wall of the artery, is more than six inches in diameter; its mouth is oval, an inch wide; its walls are from one to three lines in thickness; its cavity is empty; its inner surface is uneven and rough, with flakes of fibrine adhering to it.

Presented by Sir William Blizard.

- 3210 A. A part of the abdominal aorta in the neighbourhood of the coeliac and superior mesenteric arteries. The whole circumference of the vessel is much diseased, and there is a large aneurism of the front wall, involving the origin of the inferior mesenteric artery. The sac is filled with coagula, which now appear laminated, but which, when the specimen was recent, were very imperfectly decolorized. In the centre there was recent blood.

From a man, aged 30, subject, shortly before his death, to palpitations, cough, dyspnœa, general dropsy, and albuminaria. On post-mortem examination, the heart was found to weigh 21 oz.; there were marks of double pleurisy and of pulmonary apoplexy; an incipient aneurism sprang from the ascending part of the arch of the aorta (No. 3160). (See Trans. Path. Soc. vol. xii. p. 73.)

Presented by Dr. Peacock, 1876.

3210 B. A section of an aneurism projecting from the posterior surface of the abdominal aorta opposite the origin of the cœliac axis. It communicated with the artery by a very wide orifice, but is now completely filled with coagulum. This, with the exception of the external layer, which is pale and laminated, is coloured and homogeneous. The clot projects from the aneurismal sac into the artery and also presses inwards the arterial wall immediately below the orifice of the aneurism, so that the vessel is completely occluded. The wall of the most prominent portion of the aneurism is wanting, and was probably formed by eroded vertebræ. The artery above the sac is much dilated and atheromatous. *Presented by Charles Stewart, Esq., 1881.*

3211. The lower part of the abdominal aorta, with the common iliac arteries, showing an aneurism involving the entire circumference of the artery, and extending to both common iliacs.

3212. The abdominal aorta of a Jaguar, of which a small portion of the wall is dilated into a spheroidal aneurismal sac, about two inches in its chief diameter. The sac is nearly full of firm laminated coagulum. Around its mouth, and in isolated patches on several other parts of the artery, the internal coat appears slightly thickened, and there are deposits, probably of fatty matter, beneath it. Over many of these deposits, also, small portions of the inner coat have been removed, leaving smooth-edged apertures like ulcers, some of which are very close-set, and give the remains of the internal coat, in some parts, an irregular reticulated appearance. Wherever this disease has made much progress, the artery is slightly dilated.

Presented by the Council of the Zoological Society.

3213. The arch of an aorta, with its great branches, the larynx, trachea, and other adjacent parts. The first and second portions of the arch of the aorta are slightly dilated, and in a few parts pouched-out. There is also slight general dila-

tation of the innominate artery, and nearly the whole length of its anterior and inner wall is dilated into a large aneurismal sac, which has pressed forwards and inwards, and in some degree displaced the trachea. The sac has been opened in front and filled with wool: the state of its walls and contents cannot be seen, but the inner coat of the arch of the aorta just below it is irregularly thickened, and contains a large quantity of fatty and earthy substance. The carotid and subclavian arteries appear healthy.

Presented by Sir Everard Home.

3214. The arch of an aorta, with the trachea and other adjacent parts. A small aneurism projects from the right and posterior aspects of the innominate artery. It has formed attachments to and bulges considerably into the trachea on the right side. The mucous membrane of the trachea is normal. The sac is nearly full of laminated coagulum. The aorta is atheromatous, especially at the origin of the great vessels, but the aneurism is confined to the trunk of the innominate. The right common carotid artery is entirely obliterated at a point below the cricoid cartilage; the right subclavian also is closed beyond the scalenus anticus muscle.

From a woman, aged 28, who, when first examined, presented a pulsating tumour immediately above the sternum, which was evidently making considerable pressure upon the trachea, and producing great dyspnœa. A loud bruit was present in the tumour, and extended towards the carotid; the right radial pulse was much smaller than the left. Pressure on the right carotid artery diminished the tumour, and relieved the dyspnœa; pressure on the subclavian artery increased the dyspnœa. The right common carotid artery was tied on August 30, 1836. She made a good recovery; the tumour diminished, though it still pulsated, and the difficulty of breathing ceased. She came again under treatment in July 1838, with cough and dyspnœa; when quiescent, there was no appearance of tumour in the site of the former swelling, but on deep pressure behind the sternum pulsation was felt; and on applying the stethoscope, a double sound, as of the heart, was heard, and a slight bruit. The latter was very distinct in the supraclavicular space and slightly so below the clavicle. The right radial pulse was still smaller than the left. The right subclavian artery was tied on August 2, 1838. Ten days after there was neither bruit nor dyspnœa. She died of pleurisy after ten days' illness, on November 27, 1838.

The case is described in the *Trans. Path. Soc.* vol. xviii. p. 42, where also references are made to its previous publication in the '*Lancet*.'

Presented by S. W. Fearn, Esq., 1867.

- 3214 A.** A heart, with the parts in relation with an innominate aneurism, for which ligatures were applied to the right carotid and subclavian arteries. The entire length of the innominate artery is involved in a spheroidal aneurismal dilatation. The proximal portion of the right common carotid artery is dilated, and the roots of this vessel and the subclavian appear to have been carried upwards in the enlargement of the aneurism, so that they now lie just below the level of the cricoid cartilage. The sac is almost filled with laminated fibrine; and its coats having given way, its walls are in great part formed by matted connective tissue and the surrounding structures. The trachea was slightly compressed, and formed part of the wall of the aneurism. The carotid artery at the level of the cricoid cartilage, and near the site of the ligature, is filled with clot. Just below there is an irregular destruction of all its coats, and the rent is continuous with a rupture in the upper part of the aneurismal sac. The subclavian artery appears healthy and, with its branches, is pervious to within a short distance of the part at which the ligature was applied; on each side of this point it is filled with coagulum. The heart is hypertrophied. The arch of the aorta is uniformly dilated, and atheromatous. The orifice of the innominate artery is dilated, but the other large trunks are of natural size. A small aneurismal pouch is situated on the posterior surface of the descending portion of the arch, and had eroded slightly the bodies of the tenth and eleventh vertebræ.

From a Hottentot male about 50 years of age, who had been a hard drinker. There was dulness over the middle of the sternum, and a bruit most pronounced over the right sterno-clavicular articulation; with pulsation in the neck above that part. On Sept. 8, 1874, the right carotid and subclavian arteries were ligatured with silk. The force of the pulsation diminished, and the bruit was softer after the operation; the pain was much relieved. On Oct. 9, the subclavian wound had healed, and the

ligature had separated from the carotid, the wound being healed with the exception of a small sinus at its lower angle.

Notwithstanding the diminution in force of the impulse, the tumour appeared to have risen in the neck. On Oct. 24 he caught cold from exposure, and the next morning there was a little bleeding from the sinus over the carotid artery. The bleeding recurred several times, and he died comatose on Nov. 12, sixty-five days after the operation. Shortly before death the right cornea sloughed.

At the autopsy, the brain was pale and soft, the posterior wall of the aneurism was exceedingly thin, and its sac had given way just below the part where the ligature had been applied to the carotid. (See 'Lancet,' vol. i. p. 192, and vol. ii. p. 164, 1875.)

Presented by Frederick Ensor, Esq., 1875.

- 3215.** The arch of an aorta, with its branches. There is a large aneurism of the innominate artery, formed by dilatation of nearly the whole of its length and circumference, but especially of its posterior and lateral walls. The sac of the aneurism has an irregular spheroidal shape, with two large oval pouches prolonged downwards from its lower part: its interior, partially exposed, is nearly full of laminated coagulum. The right carotid artery adheres to the front of the sac, and is flattened by it; the right subclavian adheres to its lower part, and is obliterated by its pressure. The right pneumogastric nerve, which is much enlarged, is also attached to the front of the sac, nearly an inch to the right of the carotid artery; in its further course, the nerve is imbedded in the walls of the sac, but its recurrent branch appears again at the back part, in a groove between the main portion of the sac and one of its pouches. The arch of the aorta and the other arteries are of ordinary size.

From the Museum of Sir A. P. Cooper.

- 3216.** A heart, with its large vessels and other adjacent parts, dried. The greater part of the wall of the innominate artery, especially its anterior and lateral wall, is dilated into a nearly globular aneurismal sac, which measures three inches and a half in diameter, and in its progress has come in contact with the upper part of the sternum, and pushed aside and compressed the œsophagus, trachea, and vena cava superior. The right carotid and subclavian arteries



proceed from the sac, at a distance of about three inches from the arch of the aorta, and appear healthy. The arch of the aorta is generally dilated, and has earthy deposits in its coats. The heart is healthy.

From the Museum of Sir A. P. Cooper.

3217. A heart, with the arch of an aorta and its large branches, dried. The anterior wall of the upper half of the innominate artery is dilated into an aneurismal sac of an irregularly oval form, which measures six and a half and five inches in its two chief diameters. The anterior part of the sac is attached to the upper piece of the sternum, the first rib, and the clavicle, in all of which it has produced considerable absorption: from its posterior wall proceed the trunks of the right subclavian and carotid arteries, and, by the situation at which they are given off, it is evident that this wall of the artery is not elongated, notwithstanding the great extension which a part of its anterior wall has undergone. Between the first rib and the clavicle, the subclavian artery is obliterated, probably by the pressure of the aneurism. The arch of the aorta appears to have been slightly dilated, but it may have been distended in making the preparation.

From the Museum of Sir A. P. Cooper.

3218. A heart, with the arch of the aorta. From just above the valves to the origin of the left subclavian artery the aorta is dilated to nearly three inches in diameter, all its walls having equally yielded. Its inner coat is in many places thickened and opaque white; in many also it is irregularly elevated and cracked over abundant deposits of fatty substance and plates of earthy matter. The innominate artery is almost uniformly dilated to more than twice its ordinary size, and appears to have burst by a large oblique rent near its origin. The subclavian and carotid arteries, and the aorta beyond their origins, are a little dilated. The heart is generally enlarged; the left ventricle especially is very much so, and its walls are hypertrophied.

3219. The arch of an aorta and parts of the great vessels, showing

aneurisms of the innominate artery and of the adjacent portion of the arch. The innominate artery presents an oval dilatation of its coats, which presses on the right recurrent laryngeal nerve and the innominate veins. The aortic aneurism opens backwards, with a circular orifice half an inch in diameter, immediately to the left of the origin of the innominate artery; and it had burst into the trachea just above its bifurcation.

From a man, aged 36. After suffering for several months from cough, dyspnœa, and pains in the left side, extending across the chest to the right shoulder, he suddenly brought up a large quantity of blood and immediately died. For a full account, see *Trans. Path. Soc.* vol. xxvii. p. 130.

Presented by Dr. Peacock, 1876.

- 3220.** The heart and large vessels, showing an aneurism of the ascending portion of the arch of the aorta and innominate artery. The aneurism is filled with clot, which blocks the artery and the greater part of the arch of the aorta, and leaves only a small space (possibly wider before the artery contracted upon the clot through the action of alcohol) by which blood could have passed to the vessels on the left side of the neck and arm. Bristles placed in passages through and around the coagulum show in what directions blood may have found its way to the vessels on the right side. The trachea is considerably flattened from before backwards.

From a woman, aged 64, subject for several years before death to dyspnœa. When admitted into hospital for chronic cystitis, which proved fatal eight days later, contraction of the right pupil, dilatation of the left, dysphagia, and dyspnœa were observed. (See *Trans. Path. Soc.* vol. xxiv. p. 39, also *MS. Notes*, vol. i. p. 461.)

Presented by Dr. Dowse, 1872.

- 3221.** A section of the upper part of the trunk of a common carotid artery, with its bifurcation. A portion of the inner wall of the upper part of the carotid, about half an inch in length, near the bifurcation, is dilated into an oval aneurism an inch and a half in its chief diameter. All the coats of the artery appear to be engaged in the dilatation, and the

sac is nearly full of laminated coagulum. The upper part of the sac, towards which the current of blood must have been directed, does not contain coagulum ; those layers of the coagulum which are next the lower wall of the sac are very firm and compact ; those near the cavity are softer and loosely connected. *Hunterian.*

3222. A heart, with the great arteries of the chest and neck, the larynx, trachea, and other adjacent parts. There is a large spheroidal aneurism formed by the dilatation and growth of an oval portion of the upper and posterior wall of the left common carotid artery. The sac measures between four and five inches in its chief diameter ; all the adjacent parts are adherent to its exterior ; its mouth is about an inch in diameter, oval, smoothly and roundly bordered, seated about an inch below the bifurcation of the carotid. In its growth the sac has compressed the left side and back part of the larynx and trachea. It is nearly full of laminated coagulum. Both below and beyond the sac, the internal coat of the artery is much thickened and indurated, and its inner surface is rendered irregular by morbid deposits. This is especially the case near the mouth of the sac, where also the artery is slightly dilated. The aorta is similarly diseased, but in a much less degree ; the heart and the other large arteries appear healthy.

Presented by Thomas Blizard, Esq.

3223. An aneurismal sac of an oval form, and about three-fourths of an inch in its chief diameter, from the right internal carotid artery of a lady. It is nearly full of coagulum.

Hunterian.

3224. A rather larger globular aneurismal sac, from the left internal carotid artery of the same patient. It also is nearly full of firm and compact coagulum. *Hunterian.*

The following history of the case was published in a "Case of Aneurisms of the Carotid Arteries," by Sir Gilbert Blane, in the 'Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge,' vol. ii. p. 192 (London, 1800).

"Case of Aneurisms of the Carotid Arteries."

"The subject of this case was a lady who had, till a few years before her death, enjoyed a good state of health, had many children, once three at birth at or near the full time. She had always lived very full in point of eating, but had been temperate in drinking. Several of her family had been affected with complaints of the head, particularly apoplexy.

"About five years before her death, being then sixty-four years of age, she was suddenly seized with a fit of giddiness and dimness of sight, succeeded by acute pain in the forehead, which remained for some time. The indistinctness of vision continued for six months.

"After this she was at intervals seized with giddiness, headache, and imperfect vision. She had a similar attack two years after the first, from which also she recovered to a certain degree. From this period she continued to be subject, from time to time, to the above-mentioned symptoms as long as she lived.

"She for some time saw objects double, but the particular period of this could not be ascertained.

"I first visited her on the 9th of March, 1791, about sixteen months before her death. She had some time before this betrayed signs of mental derangement, and I found her at this time evidently maniacal. The symptoms, however, were so mild that she was sensible of her own situation, frequently talking of it, and lamenting it. She recovered from this attack in three weeks.

"In September following she had another attack, more severe, and with more fever. She recovered from this in a month.

"In the middle of December following she became insane to a great degree, and this attack seemed to have been brought on, or at least, aggravated, by strong emotions of joy and vanity upon her daughter marrying a man of very high rank. She was now violent and unmanageable, sometimes in gay and elevated spirits, at other times depressed, again facetious, and almost always refusing food, drink, and medicines.

"She continued in this state till the first week of February, 1792, when she recovered her senses.

"On the 4th of June following she became affected with giddiness, redness of the eyes, and numbness of the hands. She expressed herself conscious of approaching mania, and it came on with great violence, attended with symptoms of fever. On the 19th the fever increased, with aphthous sores on the throat. The alienation of mind continued, but evidently partook more of mania than feverish delirium. She continued in this state till her death, which happened on the 30th of this month, in the sixty-ninth year of her age.

"The chief means used for her relief at the different periods of my attendance were taking away blood from the head or near it, purgatives, antimonial medicines, abstinence from animal food and fermented liquor, from which she seemed to derive temporary benefit.

"Upon examining the body there was no appearance in the brain

itself that could in any way account for the symptoms. There was, indeed, a greater quantity of fluid than common in the ventricles, and the surface of it was moister than it is usually found in a sound state; but in all other cases which have occurred to me of organic affections of the brain proving fatal, except those which are sudden, such as apoplexy, there has been a preternatural quantity of fluid in its ventricles. There were also spiculæ of bone in the membrane forming the falx. The inner substance of the crura cerebri was of brown colour, and more tender than natural. The optic nerves were smaller than natural, as if they had been wasted. The septum lucidum was more than usually dense.

“But the morbid appearance in this case, which was so singular and to which the symptoms of complaint seemed chiefly referable, was two bulbs, about five-eighths of an inch in diameter, filling up the hollow on each side of the sella turcica, which were evidently dilatations of the carotid arteries, and, from their being filled with laminae of coagulated blood, there could be no doubt of their being aneurisms of these arteries. The dissection was made by Mr. Hunter, assisted by Mr. Home, in the presence of Dr. Jenner and myself, and all concurred in opinion that these tumours were aneurisms. The one on the left side was the largest. That on the right side communicated with the cavity of the artery, which was not the case with the other.”

3225. Parts of common, external, and internal carotid arteries. There is an aneurismal dilatation of the internal carotid artery, commencing an inch and a half from its origin. The sac is of an oval form, measuring in its chief diameter, which is directed vertically, nearly two inches; its walls are thin and torn, and it is lined with thin layers of fibrine. It appears to have been formed by dilatation of the whole circumference of the artery, for the healthy portions of the trunk open into its upper and lower ends. The external carotid artery appears to be obliterated just above the origin of the facial artery.

The aneurism opened by ulceration into the pharynx.

Presented by G. J. Guthrie, Esq.

3226. The bones forming the left middle fossa of the skull, with the intracranial portion of the internal carotid artery, from the outer side of which projects a large aneurism. This communicates with the artery by a well-defined, smooth-edged aperture, about an eighth of an inch in diameter, and admitting a probe for only an eighth of an inch. The

aneurism has not been opened, but felt nearly solid. The wall of the aneurism is in great part calcified; the motor nerves of the eyeball are stretched over and the Gasserian ganglion flattened under it. The optic nerve has escaped pressure, and the distal branches of the artery are pervious.

From a lady, aged 51. For many years she had been subject to headache followed gradually by symptoms of paralysis of the left sixth and third nerves, with more or less affection of all the sensory divisions of the fifth. The fundus of the left eye remained normal, but the sight was dim from loss of accommodation. The disease being correctly diagnosed, ligature of the left common carotid artery was proposed, but ultimately abandoned. The pain and all other active symptoms of the intracranial aneurism ceased eight years before the patient's death. A pulsating tumour formed in the abdomen and produced bone disease, abscess, and death. A large dissecting aneurism of the aorta was found, extending from the commencement of the thoracic to the bifurcation of the abdominal aorta. (Trans. Clinical Soc. vol. viii. p. 127, 1874-5.)

Presented by Jonathan Hutchinson, Esq., 1875.

3227. A large aneurism of the left external carotid artery, with the tongue, pharynx, larynx, and other adjacent parts. The aneurismal sac is nearly globular in form, and measures three inches and a half in diameter. It is close by the origin of the artery, with the cavity of which it communicates by a narrow oval aperture, about one-third of an inch in length, and directed almost vertically. This aperture is indicated by a portion of whalebone, which is passed from the common carotid artery, through the commencement of the external carotid, across the aperture, and then through the continued trunk of the external carotid. The walls of the sac are a quarter of an inch thick, formed of dense tissue, in which none of the coats of the artery can be discerned; its form and general appearance are, however, such as indicate that it was formed by dilatation and growth of that portion of the coats of the artery at which now its mouth is situated. Its cavity is nearly full of firm laminated coagulum. By its pressure the sac has displaced the larynx, the mucous membrane of which is very œdematous. The common and internal carotid arteries, as well as the continued trunk of the external carotid, even to the borders of the mouth of the sac, are perfectly healthy. *Hunterian.*

3228. A right subclavian artery, with a small portion of the sac of a very large aneurism which communicated with the artery near the giving-off of the thyroid axis. The trunk of the artery, which is laid open, is quite healthy. At the division into the right subclavian and carotid, the internal coat of the innominate artery is a little elevated by fatty deposit. The sac is lined with fibrinous coagulum.

Hunterian.

3229. The right axillary artery of the same patient. Its canal, through a length of an inch and a half beyond the aneurismal sac, is completely full of firm coagulum. There is no apparent alteration in the texture of the artery, but the adjacent tissues are hardened and adhere closely to it.

Hunterian.

3230. Section of a mass of fibrinous coagulum, nearly six inches in diameter, from the aneurism last described. The circumference of the mass is laminated; its centre is compact and almost homogeneous. It has been hardened by some saline solution*.

Hunterian.

3231. A heart, with its large vessels, and the right subclavian and axillary arteries. There is an aneurism of the axillary artery at the part where the brachial plexus of nerves is in nearest relation to it. The sac is about an inch in diameter, globular, and compactly filled with laminated coagulum, into which a section is made from behind. The sac appears to be formed by dilatation of all the coats of a small portion of the upper and posterior wall of the artery. The brachial plexus is closely adherent to the sac externally. Beyond the sac the canal of the artery is much narrowed, and its interior near the mouth of the sac is uneven and rough; but between the sac and the heart the artery is healthy.

* It was in this preparation that Sir Everard Home found the crystals of sulphate of lime, and phosphate and muriate of soda, described by him in the Croonian Lecture on "A farther Investigation of the component parts of the Blood," Philosophical Transactions, 1820, vol. cx.

The aorta has but two valves ; both of them are thickened and opaque, and their margins are covered with yellowish warty excrescences. There is a growth of the same kind on the wall of the aorta behind the larger valve. The left ventricle is dilated and hypertrophied.

3232. A very large aneurism of the right axillary artery, with the adjacent parts of the shoulder and upper arm, and the arch and descending portions of the aorta. The aneurism occupied the whole axilla, elevating the shoulder and pressing-in the side of the chest : a portion of it extends two inches downwards on the inner side of the biceps humeri muscle ; the pectoralis minor is shown, and the brachial plexus of nerves is stretched and closely united to the anterior and upper surfaces of the sac. The general form of the sac is nearly globular, and it measures from six to eight inches in its several diameters ; the portion which extends by the side of the biceps is cylindriform, and about one inch and a half in diameter. The aorta is dilated to about one half more than its natural size ; the innominate, carotid, and the left subclavian arteries are but little dilated ; the right subclavian is twice as large as is natural, from its origin to within an inch of the part at which two ligatures have been applied. Between the upper ligature and the dilated portion the trunk of the artery is much contracted. At and between the ligatures the artery is involved in sloughing tissue, and its condition is not clearly discernible.

The patient was a man 43 years old. The swelling in the axilla had been observed for about three months, and its origin was ascribed to a fall on ice, when the arm was extended, six months before it was first noticed.

The tumour, when the operation was performed, was nearly twice as large as it now appears ; the arm was enormously swollen, its upper part being hard, the lower part, as well as the compressed and flattened side of the chest, soft and œdematous ; the temperature of the arm was natural, but it was insensible and motionless, and the pulse of the radial artery could not be felt. The subclavian artery was exposed by operation, and an armed needle was passed under it ; on withdrawing the needle considerable hæmorrhage ensued, but soon ceased ; for security a second strong ligature was placed on the artery three-fourths of an inch nearer to the heart, close to the edge of the anterior scalenus

muscle. At this part the artery was dilated, and its coats felt soft and thickened. For some days after the operation the case made favourable progress. On the fifth day there was increased pain in the tumour and in the arm, and much constitutional excitement. The patient was bled to eight ounces, and an anodyne was given with great benefit. On the thirteenth day there was slight oozing of blood from the wound, and on the fourteenth an oozing of dark putrid blood; it was arrested by compression, but the patient next day died exhausted.

After death the wound was found full of coagulated blood; the upper ligature lay loose among the coagula detached from the artery, and enclosing a slough (in the preparation it has been replaced in the situation which it occupied); the lower ligature (the first that was applied) was still attached, though the vessel at this part was extensively ulcerated. It appeared that the hæmorrhage must have proceeded from this part. Where the second ligature was applied the vessel was contracted and contained a coagulum. The axillary vein passed over the inner part of the sac, adhered firmly to it, and was obliterated three inches below the clavicle. Below the tumour the brachial artery was found of small size and full of coagula; all the anastomosing vessels were much enlarged.

The case is further related in the 'Edinburgh Medical and Surgical Journal,' 1827, vol. xxvii. p. 4.

From the Museum of Robert Liston, Esq.

3233. The parts concerned in an aneurism of the right axillary artery and of the lower part of the third portion of the subclavian. The upper part of the same portion is tied with a thick silk ligature. The sac is full of coagula; the subclavian vein is also much obstructed by coagula, and its walls appear thickened. Portions of the clavicle and first three ribs are absorbed at the points where the aneurism presses on them. The aneurism was found to communicate with the artery at the point where it passes the outer border of the first rib.

From a man aged 45, accustomed to lift heavy weights. He was admitted into hospital for double subclavio-axillary aneurism, which had been but a few months in progress; the right aneurism was large, and a loud bruit was heard over it, the left (3234) was smaller, without bruit. The right subclavian artery was tied after convalescence from bronchitis, which recurred and proved fatal a fortnight after the operation. The aorta, innominate, and left subclavian arteries were extensively atheromatous. The arteries of the right arm were filled with clot from the seat of ligature to the wrist.

Presented by John Gay, Esq., 1871.

3234. An aneurism of globular shape, involving the whole circumference of the left axillary artery ; it has been opened and some of the clot turned-out.

From the same patient as the preceding specimen.

Presented by John Gay, Esq., 1871.

3235. The arch of an aorta, with its great branches, the last cervical and first two dorsal vertebræ, the first left rib, and other adjacent parts. There is a nearly globular aneurism of the left axillary artery, about an inch and a half in diameter, immediately beyond the first rib. It appears to be formed by dilatation of the whole circumference of the artery : the part of the trunk between it and the aorta is dilated and elongated ; that below it appears healthy. A ligature composed of four stout silk threads has been tied round the artery, where it crosses the first rib, just beyond the insertion of the scalenus anticus muscle. Some of the branches of the brachial plexus of nerves are adherent to the aneurismal sac ; their trunks are shown in the natural relations to the artery at the seat of the operation. The arch of the aorta is, generally, somewhat dilated and considerably elongated ; as are also the innominate, right subclavian, axillary, and carotid arteries. Part of the right subclavian and axillary has been laid open, and exhibits a small partial dilatation (besides the general dilatation) in the situation corresponding to the larger aneurism on the opposite side. The inner coat of this part of the artery is uneven and tuberculated by thickening and deposits of fatty matter beneath it.

Presented by Sir William Blizard.

3236. The heart and great vessels of a patient who had suffered with an aneurism of the axillary artery seven years before death ; it was cured by pressure extending over a period of three months.

The preparation shows the heart and arch of the aorta, the right subclavian artery, a small piece of the first rib over which that vessel passed, and the axillary artery surrounded by the cords of the brachial plexus. The aneurism appears to have been fusiform. The extent to

which the vessel was affected cannot with certainty be ascertained, the whole sac being shrunk into a flattened fibrous mass. The aneurismal dilatation appears to have commenced an inch and a half below the first rib, and to have involved about two inches of the length of the vessel. A coagulum extends from the obliterated sac upwards to the first rib; and below the sac for a similar distance, though probably both upwards and downwards much of the now present clot formed after death. The arteries given off from the plugged part are, above the obliterated portion of the artery, a rather large acromial thoracic; from the upper part of the obliterated portion, an alar and a long thoracic; below it the subscapular and circumflex arteries are enlarged. The rest of the artery is healthy; but the subclavian, as it passes over the first rib, immediately beyond the thyroid axis, is folded upon itself, but is not occluded by clot. This folding was attributed to the pressure employed for the cure of the aneurism. The right internal mammary artery is enlarged. The collateral circulation appears to have been established mainly by the communication of this artery with the subscapular and circumflex vessels.

From a gentleman, aged 33. Seven years before his death a small axillary aneurism having appeared and increased rapidly in size, its cure was attempted by digital pressure on the subclavian artery. This treatment was continued for three months; the patient during this period could not bear the stoppage of the pulse for more than five minutes at a time. The pressure produced sores on the skin and oedema of the arm, but the aneurism became gradually consolidated from below upwards. The patient's wife continued the digital compression for a short time; the aneurism gradually disappeared, and all bruit ceased in a few months. There was much loss of power in the arm, the muscles of the hand remained atrophied, and the fingers claw-like. The patient ultimately died of bronchitis. The case is described by Mr. Holmes in his lectures on the "Surgical Treatment of Aneurism," 'Lancet,' vol. ii. 1873, p. 445. (See also MS. Notes, vol. ii. p. 75.)

Presented by Dr. Peatson, 1873.

3237. The lower portion of a radial artery, on which, nearly an inch above the origin of the arteria superficialis volæ, there is a small aneurism. The sac is about one third of an inch in diameter; it is formed by dilatation of all the coats of a

narrow portion of one half of the circumference of the artery: its mouth is therefore elliptical and directed transversely to the axis of the vessel; its walls are thin; its cavity nearly full of firm coagulum. The rest of the artery appears healthy.

From the Museum of George Langstaff, Esq.

3238. Part of a splenic artery, with many of its branches. On the trunk of the artery there is a small irregularly shaped aneurismal sac, the cavity of which is nearly full of fibrinous coagula.

From a woman 64 years old. She died suddenly of apoplexy; and earthy deposits were found in all the main arteries.

From the Museum of George Langstaff, Esq.

3239. An external iliac artery, with part of an aneurismal sac, which appears to have been formed by dilatation of all its coats. The coats of the vessel above the aneurism are thickened; their internal surface is corrugated; in two situations there are large deposits of earthy substance, and in both these the vessel is somewhat dilated. *Hunterian.*

3240. An external iliac artery dilated in its whole circumference, and through nearly three inches of its length, into a regularly oval aneurismal sac. The walls of the sac are two or three lines in thickness, and appear to be formed of all the coats of the artery, consolidated with the tissues around them. Its interior is deeply corrugated, and in part covered with layers of fibrine.

There can be little doubt of this aneurism being described in the following case:—

“*June 1762.*—I opened a man, who died of aneurism bursting in his right ham. He had four in all that were visible before death, viz., one in the right groin, just behind Poupart’s ligament; one in the middle of the thigh, just before the artery dips into the tendon of the Triceps muscle (this was the smallest); a third in the ham, which was the one that burst; and the fourth was in the left ham. The first appearance of these was in the preceding

winter; for he knew nothing of them when I saw him in November 1759, when he had a rupture, and had the operation performed by Mr. Arnold.

"He had been in St. George's Hospital for some time, but finding no relief, he came home. As it was expected that it would soon burst (some time before it did), he was desired to be attentive to it, and the moment that it did burst to apply a tourniquet above the part, which he did. He died in a few days after.

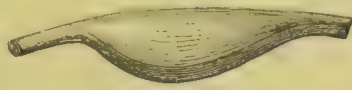
"He was opened, which was chiefly done by me. We first opened the belly to examine the rupture. The intestines were all sound; the epiploon was wasted, and at the lower part it adhered to the rings by, as it were, two or three small strings; for these were almost the only remains of it. Here was a little remains of the sac, which seemed to go as far as the tendon of the muscle. The cicatrix did not seem to be very strong at these parts.

"When Mr. Arnold performed the operation he cut away a good deal of the epiploon, and left the cut surface on the bottom of the wound, which, we may suppose, adhered there; as the part that was cut away was pretty bulky, we must suppose it was near the whole thickness of the epiploon drawn together. If that was the case, then the whole thickness of the epiploon must have led down to this part. What became of this thickness afterwards; for it only appeared like two or three strings? It must have wasted.

"We next examined the aneurism in the right groin, and found it just a dilatation of the artery, pretty near equal on all sides. It was of an elliptical figure; the long axis in the axis of the artery; and had just the appearance of the uterus of an animal that has a young one in it. The artery was traced down to the next one, which was smaller, but of the same kind. Then we came to the one in the ham, which was very indistinct upon the account of the extravasated blood. One side of it was entirely gone, viz. that next to the bone of the thigh, which was eroded or carious; and on that side it had burst. On the side next to the skin we could trace the communication between the sound artery above and that below. The coagulated blood here was of two sorts, viz. a recent, which was like congealed blood, and red: the other was like leather, and layers upon layers, becoming stronger and stronger towards the coats of the artery, which became so much so as hardly to be distinguished from the artery itself.

"Upon slitting up the others the same thing was observed as to the coagulated blood of old standing. We then examined the other thigh, beginning at the groin, where we observed very small dilatations between that and the one in the ham. There were three small ones that had just the appearance of the valvular parts of a vein, which in the vein is rather thinner and wider: these we did not open. I dissected out the one in the ham, and found that it had not dilated equally all round; for on that side next to the bone the artery was dilated or pouched out; and on

the opposite, the two canals lay nearly in the same line, and as it were continued into one another, something like the two venæ cavæ and auricle, but not so angular, something in this form—



“When squeezed it felt as if it had something in it that adhered to it, for it could not be moved from place to place, and when opened we found it to be coagulated blood adhering very firmly to the coats of the artery; and, indeed, not to be separated, for we could hardly tell which was which; and as we traced this coagulum towards the centre it became softer and softer, until we came to a cavity filled with common coagulated blood.

“Would not an artery’s becoming larger equally all round show that it is from a stretching of the coats?”—*Hunterian MS.: Dissections of Morbid Bodies*, No. 62.

3240 A. The trunk of a pudic artery, with an aneurism an inch in diameter, and nearly full of fibrinous coagulum.

The following history was copied by Mr. Clift from one of the lost Hunterian Manuscripts:—

“Nov. 1779.—A man was taken into St. George’s Hospital who had a tumour under the left glutæus major muscle, and which had a strong pulsation in it; besides which he was in a bad state of health, of which he died. I examined him after death, particularly at this part. When I dissected off the glutæus maximus of this side, beginning from its posterior edge, I immediately discovered the tumour, which was about the size of a large walnut, situated exactly upon the ischiatic notch, and adhering to the ischiatic nerve as it passes out from the pelvis. I suspected that this was not the only part of the tumour, and that it most probably came from the pelvis, but found no part of the tumour within that cavity, nor disease in the pelvis of any kind. I then cut out the whole tumour with its surrounding connections. I first examined the arteries leading to it; I found that when the probe was introduced into one of them that it went directly into the tumour. On slitting up this artery on to the tumour and through it I found that the artery was sound till it dilated at once. The coats of the artery were strong, like the coats of many encysted tumours. It contained coagulated aneurismal blood with some recent. The artery going out of this dilatation was obliterated, so that there was no outlet for the blood. The artery proved to be the *Pudica interna*. There were none of the larger arteries continued within the abdomen or thorax that were in the least aneurismal, therefore most probably none of the others, or they would most probably have been felt while alive.”

3241. Parts of a femoral artery and vein, injected and dried, together with a portion of a very large aneurismal sac, which was situated in the upper part of the thigh.

Hunterian.

- 3241 A. The left iliac and femoral arteries, with an aneurism of the common femoral. The aneurism consists of a dilatation of the entire circumference of the vessel, with the exception of the posterior wall; it is filled with firm coagulum. The artery, about half an inch above it, is occluded by a coagulum which, with the cicatrix in the skin and subcutaneous tissues, marks the point at which a ligature was applied. This coagulum appears organized, and is firmly adherent to the wall of the vessel, which is pervious between it and the aneurism. The anterior crural nerve is attached to and appears to have been compressed by the outer surface of the aneurism. The femoral vein is pervious.

From a boy aged 12 years, who was admitted to hospital with an aneurism in the left inguinal region. He first felt pain in the thigh, while in bed, three weeks before he came under observation. After this a swelling appeared, but he continued to attend school until two weeks before admission. The external iliac artery was tied with a carbolized silk ligature and under strict Listerian precautions. The wound healed in a week, and the aneurism was cured. Thirty-four days after the operation severe epistaxis occurred and recurred, and the boy died of anæmia and exhaustion. The heart, affected with aortic disease, is preserved, No. 3017 B. (See Trans. Med.-Chir. Soc. vol. lxvii. 1884.)

Presented by Robert W. Parker, Esq., 1883.

3242. The sac of a popliteal aneurism, with the arteries above and below it injected and dried. About half the circumference of the artery, and three inches of its length, are dilated into the sac. The vein, in close contact with the sac, is obliterated.

Hunterian.

3243. "An aneurism of the popliteal artery of a man at St. George's Hospital. The thigh-bone and tibia are sawed down. A section is removed from the aneurism, close to the going-in and coming-out of the [femoral and posterior tibial] arteries. The crural artery going in is almost direct

[that is, it opens into the uppermost part of the elongated oval sac]; while the artery going out below is not at the opposite end [of the sac], being very near the entrance of the crural artery, the aneurismal bag having pushed down along the side of the going-out artery. The crural artery, before it enters, for some way, is very much contracted, especially at its orifice [its internal coat also, for about two inches above the aneurism, is thickened, deeply wrinkled, and has fatty deposits beneath its surface]. The artery had given way or dilated on that side next the bone, and was filled with coagulated blood. It is most probable no blood passed out when alive [that is, no blood passed from the sac into the lower portion of the popliteal artery], as no injection passed out, although the injection was fine glue."—*Hunterian MS. Catalogue*. The interior of the sac is formed by the inner arterial coat diseased in the same manner as the portion next above the sac: above this portion and below the sac all the coats of the artery appear nearly healthy.

3244. "The section [of the aneurismal sac] which was removed from the preceding, upon which is a part of the popliteal vein, showing how much it is compressed, probably admitting no blood in the living body. Into it is introduced a black bristle."—*Hunterian MS. Catalogue*.

3245. "An aneurism of the other popliteal artery of the same man, which was felt when alive, but not large enough to be seen. This artery was giving way more on one side than another, which is pushed out into a pouch, but hardly begun to descend. The crural artery, for some way, like the former, having also three aneurismal sacs beginning in it."—*Hunterian MS. Catalogue*.

There is an almost exact symmetry of the diseased changes in the corresponding parts of these two arteries above the aneurismal sacs. In both alike, and to the same extent, the internal coat is irregularly thickened and contracted in prominent wrinkles, which intervene between shallow pouches. In both, also, there are scattered thin deposits of fatty matter beneath the inner surface; and in both, while the middle coat appears of ordinary thickness,

the external coat is indurated and consolidated with the surrounding tissues. The sac is, in this specimen, much smaller than in the preceding, but it has the same structure, and, like it, is formed by dilatation of a short portion of the whole circumference of the artery with a predominant dilatation of one half of the circumference.

3246. The popliteal arteries, from a male dissecting-room subject, showing in each a fusiform aneurismal dilatation. Both arteries are extensively atheromatous, but are only slightly affected with the later calcareous stage of degeneration. The aneurisms have undergone spontaneous cure by coagulation of blood within them, apparently not long before death, as the clot exposed in one of the vessels still retained its red colour when fresh.

Presented by John B. Perrin, Esq., 1871.

3247. A popliteal artery, with which a large aneurismal sac is connected. The cavity of the artery is exposed above the sac, and appears healthy to within a short distance of it. Just above the sac, which was probably formed by dilatation of all the arterial coats, the artery is contracted and its coats are thickened; thus its opening into the sac (marked by bristles) is very small, and below the sac its canal is nearly obliterated. The sac has an oval form, and is more than six inches in its longer diameter; it is half full of laminated coagula. *Hunterian.*

3248. A section of a large mass of coagulum from an aneurismal sac, probably from that last described. It is irregularly laminated, and in various degrees discoloured. *Hunterian.*

3249. Another section of the same coagulum. At the back of the preparation is shown a separate firm clot of blood surrounded by the laminated coagula. *Hunterian.*

3250. Parts of a popliteal artery and of the sac of a popliteal aneurism. The artery above the sac is a little larger than is natural, and its internal surface is wrinkled and very slightly tuberculated. At the margin of the sac the inner

and, probably, also the middle coat of the artery presents an abrupt well-defined border, as if they had been destroyed by ulceration. Below the sac the artery is nearly obliterated: a black bristle is passed through its remaining canal. *Hunterian.*

3251. Part of an aneurismal sac filled with layers of fibrinous coagulum. The description in the MS. Catalogue was "Coagulum of an Aneurism operated upon at St. George's Hospital with success;" but there is no evidence whether the operation were that of removing the aneurismal sac, or whether the artery were tied, and the patient lived long enough to speak of a successful result. *Hunterian.*

3252. A section of coagulum from the sac of the same aneurism. *Hunterian.*

3253. Part of a popliteal artery. A bristle is passed through an orifice by which the artery is said to have communicated with an aneurismal sac. The popliteal vein is nearly obliterated. *Hunterian.*

3253 A. A large popliteal aneurism, dried, in connexion with all the adjacent parts. The popliteal and other veins are dilated, and adhere to the posterior surface of the sac. *Hunterian.*

3253 B. A popliteal aneurism, for which the femoral artery was ligatured two years and a quarter before the patient's death. The aneurism is completely filled with firm laminated clot, and appears to have communicated with the artery by only a small opening, which is now closed: both the artery and vein are shrunk and blocked with blood-clot. The sciatic nerve is adherent to the posterior surface of the aneurism.

The specimen was taken from a man, aged 55 years, who died of pleuro-pneumonia. After the operation of ligature of the femoral artery, the aneurism decreased in size, and slowly became firmer in consistence. He was able to work soon after the operation.

Presented by Dr. W. E. Lowe, 1882.

3254. A section of a right knee-joint and the adjacent structures, showing a large aneurism of the popliteal artery from four to five inches in diameter. At the back of the preparation the artery may be seen, opened to show the elongated aperture by which it communicates with the aneurismal sac. The anastomotica magna artery is much enlarged. The sac is completely filled with laminated coagulum, which covers the greater part of the opening from the artery. The cartilages of the knee-joint are in great part destroyed.

From a man, aged 29. Four years before his death he had rheumatic fever, which attacked with equal severity all the large joints of his extremities; before he recovered he was seized with small pox. Three years later he hurt his right knee, from his horse falling under him. He recovered in a few days; seven months later the knee began to be stiff, and there was pain in the popliteal space. The knee soon became very painful, and an elastic swelling, covered with dusky-brown skin, and enlarged veins appeared projecting to the outer side of the joint, which was immovably flexed. In the absence of any symptoms of aneurism the disease was supposed to be malignant, and amputation was performed. The patient died on the thirteenth day of pyæmia.

Presented by Henry Hancock, Esq., 1868.

3255. A popliteal artery, on which a large aneurism had formed, and ruptured spontaneously, requiring amputation of the limb. The greater part of the aneurismal sac has been removed; but the oval orifice, with rounded margins, about three quarters of an inch long, by which it communicated with the vessel, is well seen.

Presented by Sir Stephen L. Hammick.

3256. A half-section of a right knee-joint with a large mass of coagulum, partly softened, in the popliteal space, the result of rupture of an aneurism. The diseased part of the artery itself is not contained in this section.

From a gentleman, aged 26, who repeatedly injured his right knee at cricket; he contracted syphilis, and a year later, when still bearing the marks of secondary eruption, he consulted the donor for a swelling in the knee. A large popliteal aneurism was discovered, and pressure was applied by means of weights and a tourniquet. In eight hours all pulsation ceased; but the skin soon became discoloured, the sac was suspected to have given way,

and a week later the limb was amputated. The femoral artery was rigid, but not atheromatous. During convalescence an aneurism was discovered on the left carotid. For this the common carotid was successfully tied by Mr. Maunder in 1865. An aneurism then slowly formed on the right carotid. The patient was alive in 1876. (See Maunder, 'Surgery of the Arteries,' pp. 43, 159.)

Presented by John Adams, Esq., 1868.

3257. A section of a knee-joint, with a large clot in the popliteal space, about six inches long vertically, from an aneurism which ruptured, and necessitated amputation. The clot is uniformly firm and neither laminated nor thoroughly decolorized; its upper boundary is well circumscribed, but elsewhere its limits blend with the surrounding structures.

Presented by R. Partridge, Esq., 1869.

3258. The remains of the popliteal aneurism, for which Mr. Hunter first performed his operation of applying a ligature at a distance from the sac. The obliterated femoral artery and the femoral vein are preserved in connexion with the remains of the sac.

The following account of the case is from Sir Everard Home's "Account of Mr. Hunter's Method of performing the Operation for the Cure of the Popliteal Aneurism," in the 'Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge,' vol. i. 1793, p. 147:—

"The patient was a coachman, 45 years of age: he was admitted into the hospital in December, 1785, with a popliteal aneurism, which he had first perceived three years previous to his admission, and had observed it gradually to increase during the whole of that period.

"It was so large as to distend the two ham-strings laterally, and make a very considerable rising between them; the pulsation was very distinct, and to be felt on every side of the tumour. The leg and foot of that side were so swelled as to be much thicker than the other, and were of a mottled brown colour; the swelling was not of the cedematous kind, but felt firm and brawny, probably from the extravasation of coagulable lymph; the leg retained its natural shape, excepting that it was larger.

"Previous to performing the operation, a tourniquet was applied upon the upper part of the thigh, but not tightened, that the parts might be left as much in their natural situation as possible.

"The operation was begun by making an incision on the

anterior and inner part of the thigh, rather below its middle, which incision was continued obliquely across the inner edge of the sartorius muscle, and made large, to give room for the better performing of whatever might be thought necessary in the course of the operation. The fascia which covers the artery was then laid bare about three inches in length, after which the artery itself was plainly felt. A slight incision, about an inch long, was then made through this fascia, along the side of the vessel, and the fascia dissected off: by this means the artery was exposed.

"Having disengaged the artery from its lateral connections by the knife, and from the other adhering parts by the help of a thin spatula, a double ligature was passed behind it, by means of an eyed probe.

"The doubling of the ligature brought through by the probe, was cut so as to form two separate ligatures.

"The artery was now tied by both these ligatures, but so slightly, as only to compress the sides together.

"A similar application of ligature was made a little lower. The reason for having four ligatures, was to compress such a length of artery as might make up for the want of tightness, it being wished to avoid great pressure on the vessel at any one part. The ends of the ligatures were carried directly out at the wound, the sides of which were now brought together, and supported by sticking-plaster and a linen roller, that they might unite by the first intention.

"The limb was found, some hours after the operation, not only to retain its natural heat, but even to be warmer than the other leg. The second day after the operation, the brawny firmness of the leg was considerably diminished; it was become soft, loose, and a good deal smaller, and the aneurismal tumour had lost more than one-third of its size.

"Nothing could show more plainly the action of the absorbents than the change the leg had undergone in so short a time; the diminution of the tumour probably arising from the fluid blood which it contained having passed into collateral branches, or into the tibial artery.

"The fourth day, on the removal of the dressings, the edges of the wound were found united through its whole length, excepting where prevented by the ligatures: there was neither pain nor tumefaction in the part, but the aneurismal tumour was the same as on the second day.

"On the ninth day after the operation there was a considerable discharge of blood from the part where the ligatures passed out. A tourniquet was therefore applied on the artery above, which stopped the bleeding; and although the tourniquet was taken off a few hours after, no blood followed. The head of a roller was then placed upon the wound, in the direction of the artery, and over that the tourniquet, which was not, however, tightened more than was thought sufficient to take off the impetus of the blood in that portion of the artery.

"On the tenth day the appearances were much the same, only

that between the compress and the knee there appeared a little fullness, like beginning inflammation. On the eleventh day this was gone off; and on the fifteenth some of the ligatures came away followed by a small discharge of matter, the tumour in the ham being lessened. On the seventeenth day the parts surrounding the aneurismal tumour were more reduced and pliable, so that it was distinctly to be felt.

“About the latter end of January, 1786, six weeks after the operation, the patient went out of the hospital, the tumour at that time being somewhat lessened, and rather firmer to the feel. He was ordered to come to the hospital once every week, and, in the mean time, to make some degree of pressure, by application of a compress and bandage, with a view to excite the absorbents to action, which in most cases has a good effect.

“About the middle of February the tumour had decreased, and was become still firmer. March the 8th, the wound, which had cicatrized, broke out again, and the patient was taken into the hospital. About the 8th of April, some of the remaining thread of the ligature came away, and an inflammation appeared upon the upper part of the thigh. In the middle of May, a small abscess broke at some distance from the old cicatrix, at which opening some matter was discharged, but no pieces of ligature were observed. Several small threads were, at different times, discharged from the old sore, and the swelling subsided; but the thigh soon swelled again to a greater size than before, attended with considerable pain. In the beginning of July, a piece of ligature, about one inch in length, came away, after which the swelling went off entirely, and he left the hospital, the 8th of July, at which time there remained no appearance of tumour in the ham, he being in every respect well.

“After leaving the hospital, the man returned to his usual occupation of driving a hackney-coach, and being, from the nature of his employment, much exposed to cold, in March 1787 he was seized with a fever of the remittent kind, which carried him off. He had not made any complaint of the limb on which the operation had been performed, from the time of his leaving the hospital.

“He died on the 1st of April, 1787, fifteen months after the operation, and leave was procured, with some trouble and considerable expense, to examine the limb seven days after death, at which time it was entirely free from putrefaction.

“The cicatrix on the anterior part of the thigh was scarcely discernible, but the parts under it felt hard. The ham had no appearance of tumour, and was to the eye exactly like that of the other limb; there was, however, a solid tumour perceptible to the touch, filling up the hollow between the two angles of the thigh-bone.

“The femoral artery and vein were taken out above the giving off the branch called profunda, and a little below the division into the arteria tibiales et interossea. The arteries and veins that were pervious being injected, the whole was carefully dissected.

“The femoral artery was impervious, from its giving off the

arteria profunda as low as the part included in the ligature, and at that part there was an ossification for about an inch and a half along the course of the artery, of an oval form, the rim of which was solid, becoming thinner towards the centre, and not bony, but ligamentous. Below this part the femoral artery was pervious down to the aneurismal sac, and contained blood, but did not communicate with the sac itself, having become impervious just at the entrance.

“What remained of the aneurismal sac was somewhat larger than a hen’s egg, but more oblong, and a little flattened, extending along the artery below for some way, the blood pressing with greater force in that direction, and distending that part so as in some measure to give the appearance of a separate bag. The sac was perfectly circumscribed, not having the smallest remains of the lower orifice into the popliteal artery. Whether this arose from the artery being pressed upon by the inferior portion of the sac, as appears to be the case in common, or was in consequence of the sac contracting after the operation, I will not pretend to determine; but it contained a solid coagulum of blood, which adhered to its internal surface.

“A section made of this coagulum appeared to be composed of concentric lamellæ, uniform in colour and consistence.

“The popliteal artery, a little way below the aneurismal sac, was joined by a small branch, very much contracted, which must have arisen either from the profunda, or the trunk of the femoral artery. About two inches below the sac, the popliteal gave off, or divided into, the tibiales.

“The profunda was of the usual size, but a good deal ossified for some length after leaving the femoral artery: the two tibiales, where they go off from the popliteal, were in the same state.

“The trunk of the femoral vein; where it passed along the side of the tumour, must have been obliterated; for at this part it appeared to send off three equal-sized branches, passing over different parts of the aneurismal sac; these must have been dilated branches, none of them having the course which the trunk of the vein should have pursued.

“These appearances throw some light upon the changes which took place in the limb after the operation. The ligature upon the femoral artery impeded the passage of the blood into the sac, so much as to allow its contents to coagulate, and render the opening into it from the artery impervious. By this a stop was only put to the increase of the tumour; its reduction to the size met with in the dead body must have been the effect of absorption.

“The conclusion to be drawn from the above account appears a very important one, viz., that simply taking off the force of the circulation from the aneurismal artery is sufficient to effect a cure of the disease, or at least to put a stop to its progress, and leave the parts in a situation from which the actions of the animal œconomy are capable of restoring them to a natural state.”

Hunterian.

3259. Part of the right lower extremity, in which the femoral artery was tied fifty years before death, by John Hunter, for the cure of a popliteal aneurism. The portion of artery obliterated by the ligature extends from the origin of the profunda downwards to the division of the popliteal. A small oblong mass of earthy matter occupies the situation of the aneurism. The anastomosing vessels by which the circulation was continued are chiefly the sciatic, posterior branches of the profunda, and descending branch of the external circumflex.

The case is thus recorded, in a paper by Sir Everard Home, in the 'Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge, vol. i. p. 138 (1793), and reprinted in Palmer's edition of Hunter's works, vol. iii. p. 604 (London, 1837):—

"Mr. Hunter's fourth patient was a coachman, 36 years old.

"The tumour in the ham was not very large, and situated lower down than usual, the whole leg being swelled, and the veins turgid. The pain he complained of was exceedingly violent, but being in a very bad state of health an operation was not thought advisable, and gentle pressure on the tumour was attempted; but, from the pain it occasioned, the operation was had recourse to, as the only chance of saving his life, although, from the irritable state in which he then was, even that seemed a forlorn hope.

"In performing the operation, the vein was not included in the ligature; but in other respects it was similar to the former.

"Immediately after the operation the limb was benumbed, and continued so for some time, which was singular, as the nerve had not been included. It became on the same day four or five degrees hotter than the other leg, and continued so for the first fourteen days, when the temperature became the same as that of the other limb.

"The sixth day the first dressings were removed, and the skin was united everywhere except at the passage of the ligature. It remained in this state until the twenty-first, when the cicatrix inflamed and ulcerated, with a sloughy appearance, and hardness up the thigh.

"On the twenty-ninth day the ligature came away. The sore now put on a better appearance; suppuration took place where the hardness had been in the course of the artery, and the parts became softer; the discharge gradually diminished, and in the seventh week the wound was healed.

"But it did not continue so; for in three days an inflammation took place, and an abscess formed, and burst at the cicatrix, which also healed up.

"About the end of the tenth week he was attacked with a very severe remitting fever, which lasted fourteen days, and left him

much reduced ; but in the fourteenth week he was so far recovered as to leave the hospital, and go into the country for the recovery of his health." The patient was able to work till he was old.

Presented by Thomas Wormald, Esq.

3260. The knee-joint of a person on whom an operation for popliteal aneurism had been performed with success. Nothing remains of the aneurism or the popliteal artery ; but they may have been removed after death. *Hunterian.*

3261. The femoral arteries of a man, who died with popliteal aneurism at St. George's Hospital. *Hunterian.*

Thrombosis and Embolism in Arteries.

262. Part of a femoral artery, from a woman who died with gangrene of the lower extremity. The last inch of the artery, which was enclosed in the gangrenous part, contains only a thin film of fibrine, forming part of a tube ; its walls are thin, and earthy matter is deposited in them. The rest of the artery is nearly full of firm, cylindriform, and irregularly laminated coagulum. Its internal coat is remarkably corrugated, all the larger and deeper wrinkles having a transverse direction : it is also yellowish, and has a dry horny aspect. *Hunterian.*

3263. The femoral, popliteal, and anterior tibial arteries, together with the anterior tibial vein, of a man who had dry gangrene of the foot. Just below the division of the common femoral artery, the trunk of the superficial femoral appears contracted, and its calibre is further diminished by thickening of its internal coat. The internal coat of the rest of the artery, thickened in a less degree, is partially reflected : that part of the artery which lay in and near the sheath of the triceps muscle is nearly filled with dense fibrinous coagulum, but not quite impervious. The upper part of the anterior tibial artery is filled with soft fibrinous coagulum, and, in the rest of its length, is impervious, and like a ligamentous cord.

The patient was an intemperate man, 52 years old. Severe pain,

redness, and swelling of the great toe commenced more than a month before death; a small black spot appeared, which gradually extended, and the foot became black, dry, and shrivelled. The case is recorded in Dr. Crisp's 'Treatise,' p. 64.

Presented by Dr. Edwards Crisp.

3264. Part of a femoral artery, containing a firm, cylindriciform, and imperfectly laminated coagulum, which fills it for a distance of four inches, commencing three quarters of an inch below the origin of the profunda. The clot also extends for an inch into a large branch (the internal circumflex), given off from the superficial femoral. The coats of the artery above and below the situation of the obstruction seem to be healthy.

From an elderly lady, in whom the femoral artery had become obliterated, apparently in consequence of arteritis. Gangrene of the limb set in, and extended nearly as high as the knee-joint, where a broad and deep groove formed in the adjacent living tissues. Amputation was performed at the lower part of the thigh, and the patient made considerable progress towards recovery, but died before the stump healed. The mortified parts are shown in preparation No. 222.

Presented by George J. Guthrie, Esq.

- 3264 A. The hilum of a lung, with a large ante-mortem clot in the chief division of the pulmonary artery. The clot is partially decolorized, fibrinous, and adherent to the wall of the vessel.

From a married, but sterile woman, aged 55, who became ill with bronchitis three years before her death. She died with pulmonary oedema and apoplexy. The branches of the pulmonary artery were dilated and thickened. The heart weighed 16 oz., and the right side was much dilated and contained ante-mortem coagula.

Presented by Dr. Goodhart, 1873.

Obliteration, Compression, and Contraction of Arteries.

3265. Parts of a femoral and popliteal artery and vein. The lower part of the artery is completely closed, and in nearly two inches of its length is contracted into a solid cord. Above this part the canal, for two inches, is full of firm

dark coagulum ; still higher up the artery is pervious, but its inner coat is thickened and corrugated, and has fatty deposits beneath its surface. The vein is healthy, but appears small.

It was believed that there was an aneurism of the popliteal artery eleven years before death, and that it had undergone a spontaneous cure by the sac becoming full of coagulum.

From the Museum of John Howship, Esq.

3266. Part of a large artery, the canal of which is in part of its course contracted to half its natural diameter by the growth of an irregular mass of bone, in which it is imbedded. At the compressed part, and just below it, there are deposits of soft substance between the arterial coats. *Hunterian.*

3267. "Obliteration of the lower part of the iliacs, &c., of a Deer from the East Indies."—*Hunterian MS. Catalogue.*

3268. The arch of an aorta, with its large branches and the trachea. The aorta is of the usual size as far as the origin of the left common carotid, where it is slightly but distinctly contracted. The narrowing slightly increases until, at the junction of the remains of the ductus arteriosus, the vessel becomes suddenly contracted to a diameter of one eighth of an inch. Beyond this point, the artery immediately regains its usual size. (See Trans. Path. Soc. vol. xxvi. pp. 68–74.) *Presented by Dr. Goodhart, 1875.*

Ulceration extending into Arteries.

3269. Part of a left groin, in which a large and deep cancerous ulcer has destroyed a portion of the coats of the femoral artery, laying open its cavity and occasioning fatal hæmorrhage. Portions of whalebone are passed through the opening in the artery.

In the catalogue of Mr. Howship's Museum it is said that this ulcer exhibits the characters of chimney-sweeper's cancer ; perhaps this implies that the patient had that form of cancer of the scrotum.

From the Museum of John Howship, Esq.

3270. The lower part of a thigh, showing epithelioma of the popliteal space involving the popliteal artery. On the outer side is a part of the cutaneous ulcer, with its warty surface and everted edges ; its floor has been opened-up, and shows the ragged condition of the tissues even close down upon the femur. A brown glass rod is passed, above, into the femoral artery ; a blue rod is passed through from behind into the artery and the aperture whence free hæmorrhage occurred before the part was removed by amputation.

From a man, aged 47. The disease commenced after a fall on the ice ; two years after the accident alarming hæmorrhage occurred on two occasions, and the leg was amputated.

Presented by Henry Smith, Esq., 1875.

Entozoa in Arteries.

3271. The anterior mesenteric artery of an Ass, showing numerous *Strongyli* adhering to its inner coat. All the coats are thickened, and when *in situ* the vessel presented pouch-like dilatations here and there, preserving its normal appearance between them.

(See Trans. Path. Soc. vol. v. p. 346.)

Presented by Dr. Peacock, 1876.

The principal other specimens in the Museum of Injuries and Diseases of Arteries may be found by reference to the Series of General Pathology, and of Diseases of the Thyroid Gland, Heart, Lungs, Brain ; and in the Series of the Anatomy of Stumps after Amputation of Limbs.

Series XXXIV. INJURIES AND DISEASES OF VEINS.

Wounds of Veins and their effects: 3276 to 3281, 3285.

Dilatation and Varicosity: 3273 to 3277.

Varicocele: 3273 (see also Diseases of the Testicle).

Dilatation following Wounds: 3276, 3277.

Varicose Veins: 3274 to 3277, 3294, 3295.

Cyst of Vein: 3275.

Effects of Inflammation (Phlebitis) and Thrombosis: 3278 to 3304.

Phlebitis: 3278 to 3281, 3292.

„ Suppurative: 3282 to 3284.

Thrombosis: 3278, 3286, 3287, 3289, 3290 to 3296, 3299 to 3304.

Thrombi displaced from Veins and forming Emboli: 3297, 3298.

Obliteration of Veins from Inflammation, Thrombosis, or Pressure:
3282, 3304.

Extension of Tumours into Veins: 3305, 3306.

Calcification of Thrombi, Phlebolithes: 3307 to 3310 A, 3287.

Dilatation and Varicosity.

3273. The veins of a testicle exceedingly tortuous and enlarged, so as to form, in their close-packed convolutions, a considerable tumour. *Hunterian.*

3274. The superficial veins from the inner side of a leg, immediately below the knee, injected. The internal saphena appears normal, but a vein running parallel with it is extremely varicose, and at one point much dilated. Above, this vein joins the saphena; below, it communicates with the same by two secondary branches which are not dilated, and by a third, which has become tortuous.

From a Dissection-subject, 1868.

3275. A portion of the upper part of the internal saphena vein, with a branch which, close to its junction with the main vein, has a prominent, pedunculated dilatation. This is

oval in form, half an inch in its long axis, and filled with well-organized clot. The femoral artery was large and atheromatous. *Presented by John Gay, Esq., 1872.*

3275 A, 3275 B. The bones of the legs and feet of a person with the veins and arteries injected. In both the limbs the posterior tibial and peroneal veins are much dilated, tortuous, and varicose. The superficial veins of the left leg are preserved, but only the posterior saphena vein is dilated. The phalanges of both of the great toes are everted, probably as the result of wearing boots with pointed toes; the middle phalangeal joint of the second toe of the right foot is bent, and shows a slight degree of the condition known as "hammer-toe." *Presented by Sir Erasmus Wilson, 1884.*

3276. A dried portion of the jugular vein of an Ass, from which blood had several times been drawn. On one side, probably that through which the punctures were made, its coats are distended into several round partial dilatations, like small aneurisms. *Hunterian.*

3277. A similar preparation, but the dilatation is more considerable and more general, though not uniform. *Hunterian.*

Effects of Inflammation (Phlebitis) and Thrombosis.

3278. The veins of an arm, exhibiting some of the effects of phlebitis after venesection. The cephalic vein (on the right-hand side of the preparation) is distended through nearly its whole length by a firm clot of blood, which at the upper part becomes smaller, and tapers to a narrow flat band, which adheres firmly by one of its surfaces to the adjacent wall of the vein. The walls of the vein, laid open at this and at the lower part, appear healthy, but in the intermediate portion thick and tough. The median-cephalic and median-basilic veins, and the lower part of the basilic vein are similarly filled with firm round clots. The upper part

of the basilic vein is pervious, but its inner coat is discoloured, being, probably, blood-stained.

There can be little doubt that the following is the history of the case :—

“Inflammation of the Arm after Bleeding.

“Mr. —, wheelwright, Edgeware-road, received a blow on the right side of the nose and cheek, which stunned him, but he soon recovered of the immediate effects of the blow.

“He was bled, &c., but the orifice in the arm opened, and he bled again. An inflammation came on in the arm, which was very severe, and a suppuration at the orifice took place. He was taken with stupor, sleepiness, and sickness at the stomach. The question was, whether these symptoms were owing to the blow or the arm. I was of opinion they belonged to the blow, and that there was a slow extravasation of blood in the brain somewhere; for he had recovered of the concussion, and it was too early for suppuration. He continued in this way for eleven days, but we thought he was rather better: however, on the twelfth day, he was taken with a most violent shivering fit; cold as possible, after which he became hot, and a profuse sweat came on, but he remained all that day very low, and debilitated, and his arm had less of the florid red. We now began to entertain but a bad opinion of him, and suspected mischief of the suppurative kind in the brain; but next day (the thirteenth day) he was considerably better, which dissipated our fears; on the fourteenth day still better. But on the fifteenth he was taken in some degree comatose, lost the power of speech, and in a day or two he died.

“On opening the head we found bloody water in the ventricles. And on examining the veins of the arm, I found the cephalic vein obliterated as high as the deltoid muscle, and some way down the arm: the cephalic median, as also the basilic median, were obliterated; likewise the basilic, some way down the arm; and the brachial artery was obliterated nearly as high as the axilla.

“These obliterations were formed by the blood coagulating and adhering to the insides of the veins.”—*Hunterian MS. : Cases and Dissections.*

3279. Part of a vein, on the inner surface of which a small quantity of lymph is deposited, near an orifice which, it is probable, remained after a wound in venesection. *Hunterian.*

3280. Part of a vein, with small thin shreds of lymph deposited upon its inner surface. The internal coat of the vein is deeply wrinkled longitudinally; and its other coats, as well as the tissues around it, are thickened and consolidated.

Hunterian.

3281. Another portion of vein from the same person, exhibiting similar appearances. Part of its cavity is nearly full of lymph. The inflammation of the vein is stated, in the Hunterian MS. Catalogue, to have been the result of its "being wounded and exposed." *Hunterian.*

3282. The veins of an arm, exhibiting the effects of acute inflammation.

They are described in the following passage from Mr. Hunter's "Observations on the Inflammation of the internal coats of Veins," in the 'Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge,' vol. i. (London, 1793); reprinted in the third volume of his 'Works,' p. 583.

"Upon examining the arm of a man who had died at St. George's Hospital, I found the veins, both below and above the orifice, in many places united by the adhesive inflammation. I also found in many parts of the veins that suppuration had begun, as we find, on an inflamed surface, but had not yet arrived at ulceration; and in several other places ulceration had taken place, so as to destroy that surface next the skin, and a circumscribed abscess was formed. The vein near to the axilla had taken on suppuration, beyond which adhesions had not formed: and this had given a free passage for the matter into the circulation, of which most probably the patient died."

A further account of the case is given in the 'Medical and Philosophical Commentaries by a Society in Edinburgh,' vol. iii. p. 430.

3283. A femoral vein, exhibiting the effects of acute inflammation after amputation of the thigh. Its cavity was full of pus; lymph and small clots of blood are attached to its inner surface, which has lost its natural polish, and is irregularly elevated, wrinkled, and, at the lower part, somewhat granular; the other coats are thickened and consolidated. About the middle and at the lower part of the vein there are remains of pairs of valves, which appear to have been almost wholly removed.

Presented by Sir William Blizard.

3284. Parts of a femoral artery and vein from a stump. The cavities of both contained pus. At the lower end of the artery, round which the ligature remains attached, a small clot of blood adheres closely to its walls: its coats appear

healthy. On the internal surface of the vein there are several thin narrow strips of adherent lymph, and at the lower part it is wrinkled and rough.

From a patient who died about ten days after his leg was amputated for malignant disease.

Presented by Joseph Swan, Esq.

3285. A portion of the integuments of an arm, and of one of the cutaneous veins. A bristle is passed through a small aperture in the coats of the vein, the remains of a wound made in bleeding. The vein is healthy, but the tissues around it are hardened and consolidated; and over it is part of a large open cavity formed by suppuration of the subcutaneous cellular tissue.

The patient died from the effects of inflammation of the subcutaneous tissue: there was no appearance of phlebitis.

From the Museum of Sir A. P. Cooper.

3286. Parts of the left iliac and femoral arteries and veins of a nobleman. The arteries are externally healthy. The whole length of the left external iliac vein is obliterated and contracted, and its coats are slightly thickened and indurated. In its interior there is an appearance of the coagulum of blood, by which it was probably at first obstructed, and which has now lost its colour, and become firm, and completely adherent to the inner surface of the vein; though not so adherent but that a portion of the wall of the vein has been removed from it, showing its distinct outline. The veins below the obliterated part are dilated, and in a slight degree varicose; those above it are healthy.

From the Museum of Sir A. P. Cooper.

3287. The right iliac veins of the same patient, dried, with the surrounding parts. Parts of them appear to have been completely obstructed with clots in which bone-like matter has been formed. *From the Museum of Sir A. P. Cooper.*

3288. Part of the left femoral artery of the same patient. Its

inner coat is wrinkled and deeply seamed, and appears spotted with yellowish deposits.

From the Museum of Sir A. P. Cooper.

The case of the patient from whom the last three preparations were taken was read at the College of Physicians by Sir Henry Halford, in an Essay on "Phlegmasia Dolens in the Male," and was published in the 'London Medical Gazette,' vol. x. p. 172, London, May 5, 1832:—

"The Earl of Liverpool had a swelling of the left leg and thigh with a varicose state of the veins from the ankle to the groin, for several years before his death. The symptoms were palliated from time to time; but the obstruction to the circulation of the blood appeared to Sir H. Halford to be the prime cause of a disease of the brain, under which the patient laboured for some time before he died. He had imperfection of the sight, and died with apoplexy; and four ounces of serous fluid were found effused in an unnatural cavity in the brain. His pulse used to beat only 44 times in the minute."

3289. A femoral vein obstructed by clots, which are firm, but not intimately adherent to its inner wall. This wall appears quite smooth and unchanged throughout. The clot extends into many of the branches of the vein.

From a girl aged 17, who died with granular contracted kidneys. Three months before her death she was seized with pain in the left groin, followed by swelling of the thigh and leg.

Presented by Dr. Peacock, 1876.

3290. A uterus, with its appendages and the broad ligaments. The veins in the substance of the uterus and those forming a plexus in the broad ligament and around the ovaries are distended with firm fibrinous clots. The common iliac veins contained similar coagula, which extended from them continuously through the vena cava to about an inch and a half below its passage through the diaphragm, where that vessel became reduced to an impervious fibrous cord.

From a woman, aged 47, who died with anasarca and granular kidneys. She had borne six children, and had always recovered well after her confinements. A few months before her death, she received a severe blow on the abdomen, and the following day had hæmorrhage from the bowels. After this her abdomen became swollen, her legs œdematous, and her urine scanty. Two

days before her death she was seized with profuse vomiting of blood. The vena azygos was of unusually large size, but the veins of the integuments of the abdomen did not appear enlarged. (See Trans. Med.-Chir. Soc. vol. xxviii. p. 1, 1845).

Presented by Dr. Peacock, 1876.

- 3291.** The vena cava and the veins joining it, from the same patient as the preceding specimen. All the trunks are seen to be filled with firm clot, not intimately adherent to the inner wall of the vein, which is smooth and quite unchanged from its normal appearance.

Presented by Dr. Peacock, 1876.

- 3292.** Part of the jugular vein of an Ass, completely filled with a coagulum which was, probably, formed in phlebitis. The coagulum fitted closely to the surface of the vein, and bears the impressions of the valves: its outer part is very smooth, and to some depth is laminated; its interior appears softer and more uniform. The coats of the vein are not obviously diseased, though deeply coloured, probably by imbibition of the colouring-matter of the blood. *Hunterian.*

- 3293.** Part of a vein, the cavity of which is in one situation filled with a coagulum of blood an inch long, and with small portions of earthy matter imbedded in it. In other situations lymph, or clot of blood, is deposited in a thin uneven layer upon the inner surface of the vein. The coats of the vein appear thickened and wrinkled.

Hunterian.

- 3294.** The veins of a leg. They are dilated and tortuously elongated; and their walls, probably in consequence of slight phlebitis, are thickened, indurated, and, probably, inelastic. Their cavities are exposed in two places, to exhibit coagula formed within them. In one situation a long coagulum completely fills the cavity of the vein; in another it lies in a thin layer upon its inner surface. *Hunterian.*

- 3295.** The veins of a leg, dilated, elongated, and very tortuous.

Their coats, like those of the preceding specimen, and probably from the like cause, are thickened and laminated. One of the veins, which is laid open, has lymph or blood-clot deposited in a thin layer upon a small part of its inner surface, and at its upper part a widely dilated portion is filled with a large clot of blood. The valves also in this vein are shrivelled and contracted; and they are so few, that it is probable some of them have been removed by disease. The integuments, of which a small portion is preserved, appear hardened; and the veins are closely united to them.

Hunterian.

3296. Portions of a femoral vein and vena cava, completely filled with coagulum. The inner wall of the vena cava appears normal at the points where the clot has been peeled off.

From a woman, aged 79, whose arm was amputated eight days after compound dislocation of the elbow-joint. The stump healed in seven days, but she gradually sank, dying on the twenty-eighth day after the operation. A large quantity of blood was found in the left pleural cavity; the serous membrane itself was covered with flaky lymph. The chief branch of the left pulmonary artery to the lower lobe of the lung was plugged, and the lung had an abscess in it; the left femoral vein was more or less obstructed with clot throughout.

Presented by Dr. Goodhart, 1871.

3297. Portion of the left lung, from the same patient as the preceding. A large branch of the pulmonary artery is filled with a coagulum which extends to the smaller branches.

In the part of the lung to which this branch carried blood, and not elsewhere, were patches of broncho-pneumonia and one abscess containing detached sloughy lung-substance.

Presented by Dr. Goodhart, 1871.

3298. A clot removed from the part of the pulmonary artery immediately above the pulmonary valves. When recent it was marked by the creasings of the coat of some long vein, and showed at least one distinct impression of a valve.

These appearances are now but faintly indicated. It was mostly dark in colour, but its superficial layer showed signs of decolorization. It lay twisted-up in several folds in the trunk of the pulmonary artery, which it completely obstructed.

From a woman, aged 27. Fifteen months after a severe labour which involved injuries producing a vesico-vaginal fistula, she underwent an operation for the obliteration of the lower part of the vagina, an attempt to close the fistula alone having failed. On the sixth day after the operation she began to sweat profusely; soon afterwards she complained of tenderness in the right leg followed immediately by intense pain in the chest. About an hour later, when suddenly raising herself, she fell back dead.

The heart was flabby and its cavities entirely empty; no trace of *ante-mortem* clot could be found. The posterior part of each lung was deeply congested and nearly airless (the patient had been persistently kept lying on her abdomen since the operation). No plugs could be found in any of the smaller arteries. All the large veins of the trunk and extremities were carefully searched, as far as halfway down the calf, and also to the elbow, without any trace of clot being found. From the pain in the leg shortly before death, it is most probable that a coagulum was formed in one of its large veins, and was detached entire, and carried by the circulation to the pulmonary artery shortly before death.

Presented by Richard Rendle, Esq., 1872.

3299. Portion of a tumour from the abdomen of a Horse, with part of a large adjacent vein. The cavity of the vein is filled by a clot of blood, the external part of which appears to have been formed in concentric layers; it is in many places intimately adherent to the inner surface of the vein. The coats of the vein appear healthy. *Hunterian.*

3300. An external iliac and the upper part of a femoral vein, obstructed throughout by firm, coloured coagulum. The inner coats of the veins are normal. Near the profunda vessels the femoral artery and vein are firmly adherent, through inflammatory changes in the sheath and connective tissue around them. At the lower part of the preparation is suspended a transverse section of the same vessels with the profunda artery, showing the extreme dilatation of the femoral vein by its clot.

From a woman, aged 45, who died five days after the removal

of a large cystic sarcoma of the ovary. The right femoral vein, partly preserved in this specimen, was hard and tender before the operation. The peritoneum was studded with secondary growths in several parts of the abdominal cavity (some growths on the under surface of the diaphragm are preserved, No. 434), but no malignant growth could be found near the right external iliac vein, which had become plugged from the pressure of the tumour.

Presented by Alban Doran, Esq., 1879.

3301. An aorta, and vena cava inferior, with the common iliac vessels. They are surrounded by lymphatic glands, enlarged and filled with some morbid, probably malignant, substance. The aorta, in which a portion of dark glass is placed, is of unusually small size in comparison with the vena cava. The veins are filled and distended with a large, branched, solid coagulum, the exterior of which forms a distinct thin layer, from which, in the upper half of the vein, the central, softer, and more uniform substance has been removed. The outer surface of the coagulum was in close contact with the interior of the vein; in a part of their extent they have been separated. The coats of the vein appear healthy.

3302. Iliac veins, from a patient who died with tuberculous disease of the testicles, vesiculæ seminales, and prostate gland, of which a specimen is preserved in the Series of Diseases of the Testicle. The internal iliac veins are filled with an irregular mass of grumous, partly laminated, and softened coagulum; their coats, as well as those of the external and common iliac veins, appear healthy. At the upper limit of the clot, in one of the veins, there is a granular friable deposit, as of tubercle, between the middle and inner coats.

From the Museum of Sir A. P. Cooper.

3303. Part of a femoral vein, the canal of which is filled with an irregular grumous clot of fibrine, in some situations closely adherent to its walls. The adjacent branches of the femoral artery are healthy.

From a man, 42 years old, who had an extensive malignant

ulcer in the groin, from which repeated hæmorrhages took place. This part of the vein lay beneath the ulcer.

From the Museum of Robert Liston, Esq.

- 3304.** Portions of the arch of an aorta, with its large branches, and of the left internal jugular vein and pneumogastric nerve, surrounded by a pale firm tumour. The vein is obliterated by the pressure, and by a clot which formed within the compressed part, and is intimately united to its internal surface. *Hunterian.*

Extension of Tumours into Veins.

- 3305.** A sarcoma surrounding the upper three inches of the diaphysis of a tibia, the epiphysis being unaffected. The tumour has invaded some veins on its surface which contain elongated nodules of cartilage. The popliteal vein was filled out by a polypus-like mass of cartilage which had extended into it from a vein passing from the tumour. The greater part of the sarcoma is periosteal, and the bone retains its normal contour without any evidence of expansion of its walls. The softer portions of the tumour consist of fusiform and oval cells with large nuclei; elsewhere, as near the affected veins, it is cartilaginous, and in parts calcified. Calcification has also commenced in the nodules of cartilage within the veins.

From a girl, aged 13, in whom the disease had been observed for five months before amputation.

For a full description, with drawings, see MS. Notes, vol. i. p. 441.

Presented by Henry Smith, Esq., 1872.

- 3306.** A section of a knee-joint, showing a cartilaginous tumour of the head of the tibia, chiefly periosteal. On the inner side of the specimen is an elongated nodular mass, like a varicose vein, closely adherent to the skin, the deeper parts of which were infiltrated by the disease, "so that hairs could be pulled out of the surface of the tumour." The nodular mass is a vein of the superficial plexus over the internal

saphena, invaded by the tumour ; its contents were found to be almost diffuent cartilage. The veins entering the tumour are displayed ; the internal saphena is indicated by a blue rod ; one small superficial vessel has a bristle passed into it as far as its termination.

From a man, aged 40. The tumour appeared within the last year of his life, without any history of injury ; amputation was performed, and secondary cartilaginous tumours were found in his lungs. For further details and drawings see MS. Notes, vol. ii. p. 28.

Presented by Sir William Fergusson, Bart., 1873.

Calcification of Thrombi (Phlebolithes).

- 3307.** A portion of a vein, in which three small round decolorized coagula of blood are attached by slender pedicles to the walls. One of them, being in progress towards the formation of a phlebolithe, has earthy matter deposited in it. The vein is dilated at the part in which the coagula are situated, but its coats appear healthy. *Hunterian.*

- 3308.** Several small round phlebolithes, marked "From peritoneal veins, human." One of them is elongated, and a small conical portion of dried blood is attached to its extremity, indicating that the earthy matter of which it is formed was deposited within a conical or spindle-shaped clot of blood. *Hunterian.*

- 3309.** Two phlebolithes, from other uterine veins of the same patient as those in No. 570.

From the Museum of George Langstaff, Esq.

- 3310.** A portion of the venous plexus from the neck of a bladder, dried, with some of the connecting tissues, to show several phlebolithes of various sizes.

From the Museum of Sir A. P. Cooper.

3310 A. Nine phlebolithes taken from the vesical and uterine veins, and one from a vertebral vein. Some are round, others oval or cylindrical with pointed ends, and one is dumb-bell-shaped. The largest is half an inch in length and three eighths in diameter.

Presented by Sir Erasmus Wilson, 1884.

Specimens of Diseases of Veins in other parts of the Museum are:—Nos. 562, 563, 569, 570, 2402, 2802, 2803, 2860, 2861, 3077, 3078; and specimens of Dilatation of Veins in the Series of Diseases of the Rectum and Testicle.

Series XXXV. INJURIES AND DISEASES OF THE PLEURA AND LUNG.

Injuries and Diseases of the Pleura : 3311 to 3330.

Injuries and Diseases of the Lung : 3331 to 3436.

Subseries 1. INJURIES AND DISEASES OF THE PLEURA.

Wounds : 3311.

Effects of Inflammation : 3311 to 3329.

Adhesive Inflammation : 3311 to 3316, 3324, 3330.

Suppurative Inflammation, Empyema : 3317 to 3323, 3371.

Fibroid Thickening : 3324, 3335.

Calcareous Degeneration : 3325 to 3329.

Pneumothorax : 3319, 3344, 3399.

Tubercle : 3324.

Morbid Growths : 3330.

Wounds.

3311. Part of the lung of a Dog, the surface of which is closely adherent to the costal pleura round a wound made into the cavity of the chest.

In his Lectures, Mr. Hunter, referring to this specimen, said :—

“ Wounds have been made into the thorax, which have suppurated and yet done well ; but how this has been brought about I cannot tell. Thus General Murray, to whom I have often expressed a wish to have a peep into his chest, has been twice thus wounded.

“ I made an experiment on a dog, but Nature and the dog cheated me ; for I made a wound into the chest, and intended to keep the wound open until the whole surface of the pleura had taken on inflammation, when I meant to have let Nature have

her way and cure the dog as she pleased; and then I meant to have killed the animal and seen in what manner this had been done; but the dog would always lie on the wounded side, and when, after death, I examined it, the lungs, I found, had adhered to the wound and prevented the spreading of the inflammation over the surface of the lungs."—*Extract from Mr. Clift's Copy of Parkinson's MS. Notes of Mr. Hunter's Lectures*, vol. i. p. 170.

A further account of the same experiment is given in the 'Treatise on the Blood,' &c.:—

"It is unnecessary to instance every possible situation where adhesions could be produced; they can take place wherever there are two internal surfaces in contact, or that can be brought into contact. I cannot give a better instance of its utility in the animal economy than in the following experiment:—I wished to know in wounds which penetrated into the chest (many of which I have seen in the army) where suppuration had come on the whole cavity of the chest, as well as on the surface of the lungs, and where the lungs collapsed, how parts were reinstated, or in what form they healed; whether the lungs, &c. lost their suppurating disposition, and dilated, so as to fill the chest again. To ascertain this as far as one well could, I made the following experiment on a dog.

"October 1779, I made an opening between the ribs into the chest of a dog, and touched the edges of the wound all round with caustic, to prevent it from healing by the first intention, and then allowed the dog to do as he pleased. The air at first passed in and out of his chest by the wound. He ate &c. for some days, but his appetite gradually began to fall off. He breathed with difficulty, which increased; he lay principally on that side, which we find people do who have the lungs diseased on one side only or principally; and he died on the eleventh day after the opening. On opening the body I found the collapsed lungs passing directly across the chest and attached to the inside of the wound all round, so that they excluded the cavity of the chest from all external communication. This circumstance, of the lungs falling across the chest, was owing to his having lain principally on that side, which I conceived to have been only accidental.

"The cavity of the chest all round was filled with air. That part of the external surface of the lungs which did not adhere, that is to say, the part opposite the upper surface of the diaphragm, and that part of the pleura which covered the ribs, were entirely free from inflammation or suppuration. This cavity, from these adhesions, being rendered a perfect cavity, shows that air, simply, has no power to excite inflammation when the cavity is otherwise perfect, which the adhesions had effected. This shows also that adhesions of two surfaces round the exposed part exclude every part from the necessity of inflammation, as was explained when treating of inflammation."—*Works*, vol. iii. p. 352.

Effects of Inflammation.

3312. Portion of a lung, with a thin, tough layer of recent lymph closely applied upon its pleural surface, and partially reflected. The free surface of the lymph is finely reticular; the attached surface smooth: there is, also, one long cord of lymph which probably extended across the pleural cavity. The pleura beneath the lymph is slightly opaque; the lung appears healthy. *From the Museum of Sir A. P. Cooper.*

3313. Part of a lung, consolidated and covered with a layer of shreddy, flocculent lymph, and false membrane. The vessels of the lung are minutely injected, but no vessels can be seen in the lymph.

From the Museum of Sir A. P. Cooper.

3314. Portions of lung and diaphragm, with organized adhesions extended irregularly between their adjacent thickened pleural surfaces. The branches of the pulmonary artery are minutely injected, but none of the injection can be traced beyond the surface of the lung. *Hunterian.*

3315. Portion of lung, on the surface of which there is a great quantity of false membrane. The false membrane is arranged, chiefly, in two layers, between which is a space half an inch in width. The outer layer, which was adherent to the costal pleura, is from one to two lines thick, tough and laminated; part of it has been reflected, so as to expose the space between it and the thinner and softer layer which covers the surface of the lung. This space is divided by deep partitions of thin, but compact, false membrane placed vertically between the two layers already mentioned, into several cells, which contained a serous fluid. The cells are oval, or, by mutual pressure, angular in form, from half an inch to nearly two inches in diameter; and each is completely partitioned from the rest.

Hunterian.

3316. Portion of the border of a child's lung, on the surface of which lymph is so deposited that it gives an appearance of small pustules.

The child died with small-pox. Its larynx is in No. 3471.

Presented by Joseph Swan, Esq.

3317. The heart of a child, with the left lung, and part of the costal pleura. Both layers of the pleura are thickened and covered with lymph, which has a smooth but delicately villous and flocculent surface, and appears organized. The lung is compressed into one fourth of its natural size, and lies close to the pericardium, with the exception of part of its lower lobe, which is adherent to the lower part of the costal pleura, and is drawn into a long, thick band. The heart and pericardium are healthy.

The patient was a very delicate girl, 8 years old. She appeared as well as usual till within fifteen days of her death, when an attack, apparently of acute phrenitis, came on. The left side of the chest was now found much enlarged, and the abdomen appeared to be distended with fluid. No treatment was of avail, and the patient was so exhausted that it was not deemed advisable to tap the chest. After death seven pints of pus were found in the left pleural sac, and the diaphragm was pressed down into a large sac, which reached nearly as low as the crest of the ilium, and had produced the appearance of fluid within the abdominal cavity. The right lung was enlarged; the right pleural sac contained six ounces of fluid. The peritoneal covering of the distended portion of the diaphragm was inflamed, and appeared ulcerated, as if an opening would soon have been formed and permitted the pus to pass from the chest into the abdomen.

From the Museum of George Langstaff, Esq.

3318. Portion of lung, with corresponding portions of pulmonary and costal pleura, from a case of empyema of long standing. The lung is compressed. The opposite surfaces of the pleura are covered with layers of organized lymph, each a line in thickness and coarsely granulated.

Presented by Sir James Paget.

3319. A portion of lung, with the adjacent pleura, showing the

pulmonary wall of a localized empyema which, opening inwards through the lung, had produced a large slough. The parenchyma of the lung communicates with the cavity of the empyema by means of a slough which has destroyed the adjacent pleura. Some shreddy tissue is still seen hanging by the opening. Below this, and also at the hinder part of the false membrane, there is some erosion towards the lung as if other openings were about to form there.

From a cabman, aged 61. He stated that he had been quite well till a few days before his admission to the hospital, when, on taking a box off his cab, he felt a sudden pain in his side. The pain continued, and he began to expectorate. The sputa had no peculiar smell suggesting that there was gangrene of the lung. He sank gradually, exhausted. The lungs were fairly healthy, except some old interstitial fibrous deposit around the diseased part. The kidneys were not good, and there was advanced cirrhosis of the liver.

Presented by Dr. Moxon, 1871.

3320. A lung compressed to a tenth of its natural size by pus effused in empyema. Its whole surface is invested with a tough, uneven layer of false membrane, which, at the posterior part, adhered closely to the costal pleura.

The patient, a man 20 years old, had empyema between three and four years. Paracentesis thoracis was performed, and he died a fortnight afterwards.

From the Museum of Robert Liston, Esq.

3321. Portion of a diaphragm, including part of its central tendon, through which there is an ulcerated opening, measuring about half an inch in its greatest diameter. The pleural surface of the diaphragm is covered with a thin layer of lymph. The margins of the ulcer are ragged and irregular.

The patient had empyema. Some of the pus escaped from the cavity of the chest into that of the abdomen, through the ulcer in the diaphragm, and produced fatal peritonitis.

Presented by Joseph Swan, Esq.

3322. Parts of three ribs, with their pleural lining, from the same patient as the preceding specimen. The pleura is thickened,

and its surface, or that of false membrane on it, is flocculent. Several ulcers have penetrated through the false membrane and pleura to the intercostal muscles.

Presented by Joseph Swan, Esq.

3323. Portion of a lung, with the corresponding part of the side of the chest. Both layers of pleura are thickened, and, in parts, intimately adherent. A fistulous canal, through which a piece of glass is passed, extends, from that portion of the sac of the pleura which is not obliterated, through the skin, where it has a depressed oval aperture, as if it had long existed. Probably pus discharged itself from the pleural cavity by this aperture.

3324. Portions of a lung affected with tuberculous disease, and having on their surfaces a layer of false membrane from one to five lines in thickness. It is dense, tough, white, and obscurely fibrous, like the tissue of a cicatrix; there are no tubercles in it. A similar layer unites the adjacent surfaces of the upper and lower lobes.

From the Museum of George Langstaff, Esq.

3325. Portion of the base of a lung firmly adherent to the diaphragm. Part of the false membrane by which they are united is converted into a thin, smooth layer of hard bony substance.

Presented by Joseph Swan, Esq.

3326. A portion of calcified false membrane which lined the right pleural cavity. It is nearly a quarter of an inch in thickness, shows some indications of lamination, and is rough and granulated on both surfaces. Under the microscope, it does not exhibit any true osseous structure.

From a seaman, 40 years of age, who is said to have died of "bronchitis of long standing." The right lung was firmly adherent to the parietes of the chest. The calcified connecting material was thickest at its posterior part, and became gradually thinner as it approached the cartilages of the ribs.

Presented by Frederick Jowers, Esq.

3327. Parts of five ribs closely approximated, and having a thick plate of bone, coarsely granulated on its surface, attached to their interior. The bone was probably formed in the substance of false membrane between the layers of the pleura; by the contraction of which it is also probable that the ribs were approximated.

3328. A calcareous cyst, which completely lined the left pleural cavity. It was the result of pleurisy connected, it may be supposed, with empyema thirteen years before death.

The case is recorded in the 'Edinburgh Medical and Surgical Journal,' vol. xlii., 1834, p. 319.

Presented by Dr. Thurnam, 1870.

3329. Portions of calcified false membrane from the pleural cavity showing formations of calcareous matter of varying thickness and extent.

Presented by Dr. Thurnam.

Morbid Growths.

3330. The lower part of a left lung, with the corresponding costal pleura, the adjacent portion of the pericardium, and the cartilages of the sixth and seventh ribs. The lung is covered with a thick and tough layer of organized lymph, and was compressed by fluid collected within the pleural cavity. In the place of the costal pleura, and of the pleura covering the pericardium, there is an uneven layer of pale, hard, new-growth (probably lympho-sarcoma), from half an inch to an inch in thickness. The inner surface of the new-growth is nodulated and coarsely granular, but smooth, and not covered with lymph. It is only in one small place adherent to the thickened pulmonary pleura.

There were numerous tumours in the lungs.

From the Museum of George Langstaff, Esq.

Specimens of Diseases of the Pleura in other parts of the Museum are:—Nos. 87, 166, 169 to 171, 177, 2753 A, 2930, and many specimens in the next following Subseries.

Subseries 2. INJURIES AND DISEASES OF THE LUNG.

Wounds : 3331 to 3336.

Bullet Wounds : 3332 to 3335.

Emphysema : 3337 to 3350 A.

Surgical : 3336.

Vesicular : 3337 to 3350 A.

Sub-pleural : 3349, 3350.

Compensatory Emphysema : 3337, 3338.

Atelectasis from fluid pressure : 3335, 3318 to 3320, 3330.

Effects of Inflammation :—

Pneumonia : 3351 to 3354.

Red hepatization : 3353, 3354.

„ „ (softening) : 3354.

Grey hepatization : 3351, 3352.

Caseous Pneumonia : 3397, 3378 to 3380 ?

Gangrene : 3354 ?, 3355 to 3358.

Chronic Inflammation, Fibroid Disease, Interstitial Pneumonia : 3357 to 3361.

Abscess : 3362.

Syphilitic Disease—Fibroid : 3363.

„ „ Gummata : 3364, 3365.

Changes associated with the Inhalation of Irritating Substances : 3366 to 3369.

Tubercle : 3370 to 3403.

Miliary Tubercle : 3324, 3334, 3370 to 3377.

Infiltrating Tubercle : 3378 to 3385, 3389 *et seq.*

Bovine Tuberculosis : 3386 to 3388 B.

Phthisis : 3389 to 3403.

Calcareous matter in Lungs : 3403 to 3408.

Substances expectorated from the Lungs : 3409. (See also Index, p. 516.)

Aneurismal Dilatation of the Pulmonary Artery in the walls of Cavities : 3394 to 3397.

Morbid Growths : 3411 to 3425.

Chondro-Sarcoma : 3411.

Ossifying Sarcoma : 3412.

Sarcoma : 3418, 3419, 3421, 3422.

Cancer : 3413 to 3416.

Doubtful : 3417, 3420, 3423 to 3425.

Entozoa : 3426 to 3430.

Diseases of Blood-Vessels, &c. :—

Purpura : 3431.

Hæmorrhage into the Lungs (Pulmonary Apoplexy) : 3432 to 3436.

Wounds and other Injuries.

3331. Portion of lung, in which a very small wound, now marked by a bristle, was inflicted by a stab with a knife.

The injury proved fatal with general emphysema.

Presented by Sir William Blizard.

3332. Portion of lung, which was wounded by a musket-ball ten days before death. The texture of the lung is solid and granular ; the pleura is thickened and covered with a firm layer of lymph half a line in thickness.

The patient was 29 years old. The ball went through the right first rib, and, carrying with it portions of bone, cartilage, and cloth, traversed the upper part of the lung and the second rib. The patient had no expectoration of blood, but occasionally expectorated large quantities of foetid matter. The whole of the lung after death was found gorged with blood, and "in some degree hepatized;" the right pleural cavity contained foetid pus. (Extract from the MS. Jacksonian Prize Essay, 1841.)

Presented by Sir Rutherford Alcock.

3333. Portion of lung, which was lacerated by the passage of a musket-ball through it thirty-one days before death. A thin layer of lymph appears to have been effused on the inner surface of the track of the ball; but the texture of the lung is unchanged.

The patient was 22 years old. The ball shattered the upper part of the left humerus, passed into the chest through the fifth rib near the spine, traversed the posterior edge of the middle lobe of the left lung, and then passed to the right side of the spine, and was cut-out over the right scapula. "With the exception of a slight cough on the seventh day after the injury, which disappeared, there was not the slightest indication of the cavity of the chest having been penetrated, or the lung wounded." On the eighteenth day the humerus, showing no progress towards union, was amputated at the shoulder-joint. Extensive suppuration took place about the stump and under the trapezius and other muscles; and of this the patient seemed to die, for it was only during the last two days of life that any symptom of injury of the contents of the chest appeared, and then it was only such an anxiety of breathing as is common in those who are dying of exhaustion.

The lungs were healthy throughout. There were considerable and firm adhesions of the pleura on both sides, particularly the right. There was no fluid in the pleura, and no air appeared

to have escaped into either the pleura or the cellular tissue. (Extract from the MS. Jacksonian Prize Essay, 1841.)

Presented by Sir Rutherford Alcock.

- 3334.** Portion of the middle lobe of a left lung, in which there is a musket-ball which was lodged in it for 159 days before death. The substance of the lung appears healthy, even in the part immediately surrounding the ball.

The patient was 42 years old. The ball entered above the scapular end of the clavicle. The case was very protracted, but presented no remarkable features; its progress was like that of a case of pulmonary phthisis. At death the external wound was nearly cicatrized. Tubercles and tuberculous cavities were found in both lungs, especially in their lower lobes, and in that of the left lung more than in that of the right; the healthiest part of all was the middle lobe of the left lung, in which the ball was lodged. (Extract from the same Essay.)

Presented by Sir Rutherford Alcock.

- 3335.** Portion of a left lung, near the surface of which, immediately beneath the pleura, a musket-ball is imbedded. The pleura in the neighbourhood of the ball is very greatly thickened, in some places measuring nearly a quarter of an inch. The lung-tissue appears as if it had been compressed and infiltrated with fibrine; but in some parts the normal vesicular structure can be detected.

The following history accompanied the specimen:—Henry Barrott, a private in the First Life Guards, aged 27, was wounded at the battle of Waterloo, June 18th, 1815, by a musket-ball, which passed through the muscles of his left upper arm, and entered the left side of his chest, fracturing two ribs. He was a patient in the Hospital at Brussels until March 1816, when he was discharged from the service with a pension. Soon after the receipt of the wound, he coughed up blood, and was treated by repeated venesections. The ball could not be extracted: but, while in hospital, an incision was made into his side, to evacuate a large quantity of matter that had collected in the chest. For many years after, he frequently suffered from attacks of pneumonia, latterly with copious muco-purulent expectoration. He sank exhausted on the 13th of October, 1857, more than forty-two years after receiving the wound.

On post-mortem examination, the circular cicatrices caused by the ball on the left upper arm and left side of the chest were still very visible. On raising the sternum, the left lung was found diminished in size, very much solidified, and firmly bound down to

the ribs by strong adhesions, which resisted the knife like so much cartilage. On separating the adhesions, a large abscess was found in the lung, containing about a pint of fœtid pus; and in detaching the lung from the posterior wall of the thorax, the ball (which weighed 5 drachms and 34 grains) was found in a cyst.

Presented by Robert Howarth Leach, Esq.

3336. A Starling, of which the integuments and other tissues are emphysematous, probably from a wound of the lung or some of the air-cells. *Hunterian.*

Emphysema.

3337. Section of a lung, of which a small portion near the lower border is condensed and indurated. In the remainder, the air-cells are greatly dilated, and, in many places, several of them have coalesced, so that the lung has a very coarse, spongy texture, and appears light and shrivelled. The small bronchi are dilated and very thin. ♀

Presented by Sir Everard Home.

3338. Another portion of the same lung, similarly changed in structure.

The history of the patient is published in "The Case of a Person who was shot through the Lungs, and survived for Thirty-two Years," by Everard Home, Esq., F.R.S., in the 'Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge, vol. ii. p. 169 (London, 1800).

"An Officer in the British Army, 31 years of age, was shot through the chest: the ball entered on the left side, between the second and third ribs. It passed obliquely upwards, and came out on the opposite side between the third and fourth ribs, near the point of the shoulder. That the lungs were wounded was very soon ascertained by an hæmorrhage from the mouth, which was so profuse as to endanger life.

"He gradually recovered from the immediate effects of the wound, but it was two or three years before he could be said to be restored to health. During the remainder of his life he was very subject to inflammation of his lungs on catching cold, and at those times had a great deal of pain, and a very considerable expectoration. He died in the sixty-fourth year of his age, thirty-two years after having received the wound through his lungs."

[This officer was the General Murray of whom Mr. Hunter spoke in his Lectures (see p. 1). Mr. Clift says, in a note to that passage from the Lectures, "When General Murray came to see

Mr. Hunter's collection in 1792 or 1793, in company with Sir Joseph Banks and others, it was stated that he had not lain down in bed for thirty years, but had slept in a sitting posture during that period. He was deadly pale, and had great difficulty in walking up stairs.]

"Upon examining the thorax after death, the external surface of the lungs was found to be in a natural state; there were some adhesions to the ribs, but not more than frequently occur at that age. There was a small quantity of water in the cavities of the chest.

"In searching for the course of the ball, the spot where it entered the lung of the left side was readily discoverable by the remains of a small cicatrix, the membrane at that part being thinner than common, and having a puckered appearance, which terminated in a central point. This part of the lungs had not the slightest adhesion to the pleura, but was in its natural detached state. The course of the ball through the substance of the lungs was readily traced by dissection, for an induration of the substance of the lungs was formed wherever it passed; this was best seen by making transverse sections of this thickened part. The appearance of the lungs in the right side was of the same kind, but in a less degree.

"The course of the ball was through the upper lobe of both lungs, at nearly the distance of two inches and a half from the highest part of them. The portion of lungs above the ball did not contain air, but the cells were filled with serum, so that it was more dense than natural, and sank in water, but this part was not in any degree shrunk or contracted. It had no communication with the branches of the bronchi, the adhesive inflammation consequent on the wound having consolidated all the parts above the line through which the ball passed.

"The internal membrane of the trachea, and even that of the smaller branches of the bronchi, were universally vascular, and the edges of the lungs were in some parts emphysematous.

"The heart was more than double its natural size, and in a flaccid state. The valvulæ mitrales were thickened, opaque, and white. The semilunar valves of the aorta were diseased in a very unusual manner. One of them was destroyed by ulceration, its margins excepted; the edges of the ulcer were irregular, and the remains of the valve being perforated formed a narrow ring. The same disease had taken place in another of them, but the ulcer, which was nearly in the middle of the valve, was not so large, the disease being apparently in a more recent stage. The third valve was in a natural state."

[It is very probable that the valves thus described are those displayed in No. 3012.]

3339. Portion of the lung of a Negro, exhibiting a general slight enlargement of the air-cells, with, apparently, some thickening of their walls. Immediately beneath the pleura, also,

there are numerous small thinly walled vesicles, of a rounded form, with one or more sides flattened, and varying in diameter from one to four lines. Their appearance is as if, in each of them, all the air-cells of a small lobule of the lung had coalesced, by the removal of their walls, into one cavity, which is bounded only by the partitions separating the adjacent lobules. The pulmonary pleura is tense, and glistens with the large vesicles formed of cells coalesced beneath it. Other portions of the lungs contained masses of earthy matter.

“I have often,” says Mr. Hunter, “seen such vesicles [containing air] on the edges of the lungs; but these may be supposed to be a kind of aneurismal air-cells filled from the trachea, and are circumscribed and impervious, so that, in the state we find them, they have no communication with the external air.”—*Some Observations on Digestion; Works*, vol. iv. p. 98.

3340. Another portion of the same lung, exhibiting the same form of vesicular emphysema.

3341. Another portion of the same lung.

3342. Another portion of the same lung.

3343. Another portion of the same lung.

The five preceding specimens are Hunterian.

3344. Section of a lung, dried. It exhibits a greater degree of general enlargement of the air-cells than is in the preceding specimens; and, in one situation, air has escaped from the dilated cells and distended the pleura into a large sac.

Presented by Sir James Paget.

3345. Part of a lung, in the edge of which many of the air-cells are dilated, and have coalesced. The diseased part projects in a multilocular or sacculated swelling, bounded by the pleura, which is opaque and somewhat thickened from previous inflammation.

From a man, 65 years old, who suffered from asthma for nearly six years.

From the Museum of George Langstaff, Esq.

3346. Section of the border of a lung, dried without previous inflation. It exhibits the results of extreme vesicular emphysema. The whole of the vesicular texture of the lung, including the air-cells and minute bronchial tubes and pulmonary capillary vessels, has disappeared; and there remain only the laminæ and cords of fibro-cellular and elastic tissue which formed the boundaries and partitions of the lobes and lobules. These enclose spaces of various form and size, and variously communicating with each other.

Presented by Sir James Paget.

3347. Another section of the same lung, similarly diseased, but in a rather less degree.

The patient was a middle-aged man, who died with an acute attack of jaundice during the passage of gall-stones. Nothing was known of his earlier history; but during his last illness he had not particularly complained of dyspnœa. The lung, from which these and other specimens in the Museum of St. Bartholomew's Hospital were taken, was very large, light, pale, and anæmic. Nearly the whole of it was thus diseased. The other lung was similarly, but rather less, affected.

Presented by Sir James Paget.

3348. A portion of lung, which is much darkened with pigment, and somewhat indurated. The air-vesicles are dilated.

3349. Part of the border of an infant's lung, in which air, having escaped from some of the cells, has formed large bladders beneath the pleura, and has passed into the tissue between the lobules.

Hunterian.

3350. Portion of a lung, on the surface of which there is a sac, nearly three inches in diameter, formed by a very thin layer of pleura, expanded over air which escaped from one or more of the subjacent air-cells. A part of the membrane forming the base of the sac is opaque, as if from former pleurisy; and several blood-vessels traverse its surface.

From a woman, 45 years old, who died with hæmorrhage from the lungs, and had long had difficulty of breathing.

Presented by Sir William Blizard.

- 3350 A. Lungs of which the air-tubes and cells have been injected with wax and dried. Several large emphysematous portions are standing out beyond the rest of the surface of the lung, with smooth pale surfaces and rounded borders.

Hunterian.

Effects of Inflammation (Pneumonia, Gangrene, Abscess, and Fibroid Induration).

3351. Sections of the lower lobe of a lung, the substance of which, by the infiltration of lymph and pus, has acquired a nearly uniform pale dull yellow colour, varied only by the grey and bluish marks of previous black deposits. It is also solid and heavy, but soft and brittle; and in some parts it has a finely granulated appearance.

Presented by Sir James Paget.

3352. A section of the upper lobe of a lung, the substance of which is uniformly solid, firm, tough, and heavy. It is of a pale yellowish and greyish-white colour, mottled with spots of dark grey and bluish-black deposit; and in the greater part it presents the appearance of extremely minute, opaque, whitish grains scattered in its substance. These changes were probably the result of induration of a hepatised lung.

From a man, 48 years old. Signs of pneumonia existed for nearly five weeks before his death.

Presented by Sir James Paget.

3353. Part of the lower lobe of a lung, which has been the seat of recent plastic pleuro-pneumonia. The pulmonary tissue has a uniform solid appearance: in one half of the surface, where the section was made when recent, fibrine has been effused in the bronchial tubes, and, being coagulated by the action of the alcohol, hangs in tufts from the various orifices. The other half of the section, made after the specimen had been hardened, shows the tubes completely blocked up by coagulated fibrine. The pleural surface is coated with a thick layer of false membrane, which at the base of the

lung has a reticulated character. The base of the lung is deeply concave, possibly from the contraction of the fibrine effused upon it. *Presented by Dr. S. J. Goodfellow.*

- 3354.** A portion of a lung, solidified by acute croupous pneumonia. The section shows a granular friable surface, and in the central part of the lower lobe is a large ragged area, which formed the outer wall of a cavity produced by the disintegration of the diseased lung-tissue.

From a man, who was taken suddenly ill with pain in his chest on April 13th, 1874. He died on the 27th. No evidence of any tubercular tendency could be found, except perhaps a superficial ulceration of the larynx; which, however, is not uncommon in acute pneumonia. The lung was in the condition known as red hepatization at the base and apex, and the central part of the lung appeared softening. *Presented by Dr. Goodhart, 1874.*

- 3355** Part of a lung, nearly the whole of the upper lobe of which is in a state of gangrene. It is heavy, but soft, friable, rotten, and broken-down; variously coloured with shades of dark and dirty green, brown, and black; infiltrated with stinking fluid of like colour. The outline of the gangrenous part is not well defined; the adjacent part of the lung is heavy and nearly solid, but soft. The disease is limited to the upper lobe. *Presented by Sir James Paget.*

- 3356.** The lungs of a Puma, minutely injected. Near the centre of the left lung is a cavity with shreddy walls, apparently the result of circumscribed gangrene. The large vessels and bronchial tubes have resisted the morbid action to a greater extent than the other pulmonary tissues. The vessels around appear quite open, and there is no disease at the root of the lung. There is no tubercle or other deposit.

Presented by the Zoological Society, 1867.

- 3357.** A portion of lung affected with gangrene. The upper part of the specimen shows the pleura pulmonalis covered by thick false membrane, and below this a large piece of lung-tissue, bluish grey, separating *en masse*. Below this

is a shreddy surface, from which other portions of lung-tissue have separated. The lung-tissue, however, looks compressed and fibrous, as if some chronic change had been in progress.

From a female of dissipated habits, who died with typhoid symptoms. It was not ascertained whether the disease was a primary pneumonia, or secondary to some form of fever.

Presented by Dr. Peacock, 1876.

- 3358.** A portion of lung, containing a ragged excavation, the result of gangrene of the pulmonary tissue. The lung-tissue is much condensed, and appears to have undergone some chronic interstitial inflammation.

From a man, aged 47, who fell from the mast of a vessel while at sea, and sustained fracture of the sternum, thigh, radius, and some of the ribs. One of the fractures was compound; and the man died of pyæmia about a month after the fall. He had extensive disease of both lungs and deposits in other organs.

Presented by Dr. Peacock, 1876.

- 3359.** The upper lobe of a left lung, solidified by fibroid changes in its substance. It is very dense, of uniform grey colour, and its fibrous septa are thick. The pleura is thick in parts.

From a man, aged 43, who had enjoyed comparatively good health till a year before death. He had drunk freely, particularly of wine. He first had hæmoptysis and pain in his left chest, followed by emaciation and expectoration. There was no history of syphilis. All the viscera were healthy, except the left lung and the pericardium. He died of acute pericarditis, from sloughing of an abscess of the lung into the pericardium. The lower lobe of the left lung was in a similar state to the upper, except that extensive sloughing and excavation had occurred. The right lung was healthy, with the exception of an old scar at the apex.

Presented by Dr. Goodhart, 1872.

- 3359 A.** A similar specimen. *Presented by Dr. Goodhart, 1876.*

- 3360.** A section of a left lung, showing a thickened pleura and a shrunk and indurated condition of the lung-substance.

From a sailor, aged 20. One of his sisters had died of phthisis.

He had worked hard, and drunk large quantities of whisky. He had been troubled with cough and expectoration for eighteen months. Both lungs were similarly affected, and tubercle was present at some parts. The liver was slightly lardaceous.

Presented by Dr. Goodhart, 1873.

3361. The upper part of a lung, with extreme fibroid change in its tissue, and dilatation of the bronchial tubes. The greater part of the lung-substance is converted into a series of thick-walled cavities, and none of the healthy spongy tissue remains.

From a female, aged 32, who died with gangrene of the left leg, from obliteration of the left iliac and femoral arteries. The left lung was adherent to the parietes in all parts by old cellular adhesions, and it was much diminished in size, causing corresponding contraction of the side and displacement of the heart to the left.

The patient was known to have long had a copious thin expectoration; but the precise duration of the disease was not ascertained.

Presented by Dr. Peacock, 1876.

3362. A portion of the base of a lung, containing, close to its lower surface, an abscess with regular, but slightly flocculent walls, and half an inch in diameter.

From a case of pyæmia.

Presented by Dr. Goodhart, 1881.

Syphilitic Disease.

3363. Half of a left lung, injected. On its cut surface, at the hinder part of the upper lobe, there is a cavity, from one to two inches in diameter, the walls of which are of considerable thickness. Lower down in the same lobe, towards its root, is a grey fibroid patch in the neighbourhood of some large bronchi, and between the two, and throughout the whole of the lower lobe, are small grey patches and yellow nodules, which appear for the most part to be thickened septa, or the cheesy products of inflammation. On the other aspect, the pleura is thickened and puckered, and beneath it is another yellow hard-looking mass. The greater part of the lung is healthy, and the apex is particularly free from disease.

Presented by Dr. Goodhart.

3363 A. The outer half of the same lung.

3364. A portion of lung, containing numerous yellowish white nodules, varying in size from a quarter of an inch in diameter to small grains. They are all well defined and distinct from the surrounding lung, which is somewhat emphysematous. They were believed to be syphilitic deposits (gummata), as the patient had suffered from syphilis, and similar deposits were found in the brain, heart (see No. 2959), kidneys, and pancreas.

A man, aged 39, a railway-porter, was admitted to the General Infirmary, Hull, on December 9th. He had severe headache, of four months' duration, and his expression was vacant. Three years previously he had primary syphilis, but no sore-throat, eruption, or nodes had followed. The headache increased, was accompanied by dimness of vision, a staggering gait, and afterwards by coma. He was occasionally aroused by blistering, but remained partially amaurotic, and gradually became emaciated. For the last six weeks of his life he was semi-comatose. (See MS. Notes, vol. i. p. 73.)

Presented by T. Melancthon Evans, Esq., 1866.

3365. A portion of lung, containing several ill-defined grey fibroid indurations, the intervening pulmonary tissue being emphysematous.

From a woman, who had a well-marked syphilitic deposit in her liver, but in whom no other evidence of syphilis, either from the history or symptoms, could be obtained. The case is recorded in the 'Transactions of the Pathological Society,' vol. xxv. p. 31.

Presented by Dr. Goodhart, 1874.

Changes associated with the Inhalation of Irritating Substances.

3366. Portion of the lung of a collier, infiltrated with carbonaceous matter. *Presented by James Murie, Esq., 1860.*

3367. A portion of lung, showing condensation of its substance, slight thickening of the vessels and bronchial tubes, and great thickening of the pleura.

From a man, aged 23, who had suffered with his chest for twelve

months. His illness commenced with hæmoptysis, which recurred nine months afterwards. He then had pains in his chest, severe cough, and expectoration. He was pale and phthisical-looking, but gave a good family history. He went to millstone-work at sixteen, and had constantly been employed in working French burr. He had been temperate, and had rarely committed an excess. At first there was some deficiency in resonance of the left apex, with obscure tympanitic resonance at the right; bronchial respiration and crepitation were heard at the left apex, and cavernous respiration and rhonchus at the right. He steadily lost ground, and died, with all the signs of advanced lung-disease, six months after his illness was first observed. At the post-mortem the left pleura presented a few old adhesions. The lung was voluminous and inflated. The upper lobe showed numerous grey miliary tubercles clustered in irregular indurated patches. The apex of the lower lobe was similarly affected. The right pleura was firmly adherent at the apex, and to some extent behind and at the base; but in the rest of its extent it contained pus. The lung was compressed and studded throughout with grey miliary tubercles; its apex contained cavities, which communicated with the empyema. The ileum and cæcum contained a few tuberculous ulcers; and the larynx was slightly excoriated over one arytenoid cartilage.

The case is fully recorded in the 'British and Foreign Medico-Chirurgical Review,' vol. xxv. 1860; see also Trans. of Path. Soc. of London, vol. xii. p. 36.

Presented by Dr. Peacock, 1876.

3368. Some of the dust from the workshops of those affected with millstone-makers' phthisis.

Presented by Dr. Peacock, 1876.

3369. A portion of lung, showing condensation of its substance, slight thickening of the vessels and bronchial tubes, and great thickening of the pleura.

From a man, aged 48, a French millstone-maker. He had had cough, expectoration, and difficulty of breathing, especially during the winter, for three years, and had been worse for the last ten months. He served his apprenticeship to the milling business, but ten years before he became ill he commenced to work at millstone-making, and had continued to do so since. He had much cough, and copious expectoration—mucopurulent, viscid, and dark-coloured; considerable dyspnœa and wasting, and night-sweating. The percussion-note was everywhere defective, the movements of the chest bad, and sibilant rhonchi were heard all over. He gradually became weaker, had diarrhœa, and died.

The lungs were firmly adherent to the parietes. Both lungs were throughout sparingly crepitant, the apices being much con-

tracted, solid, and dark-coloured. No tubercles were found at any part, but there were numerous hard, black, gritty masses about the size of a split pea, imbedded in the tissue, more particularly at the apices. The left base was in a state of pneumonia. The larynx and trachea were dilated and thickened, but not ulcerated. The bronchial tubes were also dilated. The heart was enlarged and dilated. The other viscera were healthy. Some of the hard gritty matter was picked out from the apex of the lung, reduced to white ash in a spirit-lamp, and then boiled in nitric acid. Under the microscope it consisted of sharp angular granular matter, which, except as to its greater fineness, bore a close resemblance to the dust collected in the workshops in which millstones are prepared. (Vide Path. Soc. Trans. vol. xii.; Brit. & Foreign Med.-Chir. Review, 1860; Brit. Med. Journal, vol. ii. 1876.)

Tubercle and Phthisis Pulmonalis.

- 3370.** Portion of a lung, in which minute tubercles are very thickly scattered. Some of them are so minute that they look like mere points; the largest are less than a line in diameter; they are so closely set, that between the most distant there is scarcely room enough to admit another; yet they are not grouped, and very few appear to have coalesced. Their form is generally oval; their original colour appears to have been yellowish, probably a transparent greenish yellow. *Hunterian.*

- 3371.** Portion of lung, displaying miliary tubercles, in a very early stage, imbedded in its substance. Each tubercle is a mass from a quarter to half a line in diameter, firm, close-textured, prominent on the cut surface of the lung, of roundish but not regular form, greyish green or dull yellowish in colour, and slightly glistening. The tubercles are scattered at distances varying from a line to half an inch, and some are closely grouped four or more together.

From a patient who died with empyema. Similar tubercles existed in nearly every part of both lungs.

Presented by Sir James Paget.

- 3372.** Section of the apex of a lung, in which there are groups of grey miliary tubercles. The pulmonary capillary vessels have been completely filled by injection of gelatine and ver-

milion through the pulmonary artery ; but neither with the naked eye nor with the microscope can any blood-vessels be discerned within the substance of the tubercles. There is no apparent difference between the pulmonary tissue immediately around the tubercles and that of any other part.

Presented by John Quekett, Esq.

- 3373.** A section of the lung of a child thickly studded with miliary tubercles and partially solidified.

Presented by Dr. Goodhart, 1884.

- 3374.** Portions of minutely injected lung affected with acute tuberculosis. The lung is studded closely throughout with grey, slightly prominent grains (miliary tubercles), which, towards the apices, have a yellowish tint due to degenerative changes.

From a man, aged 31. He had enjoyed good health till he strained his back, and passed a quantity of blood by the urethra. He was obliged then to keep to his bed for some days, and he had never been well since. He was very livid in appearance, with a husky voice, and high temperature. He had also diarrhœa, with fœces like those in typhoid fever. He died very soon after admission.

The post-mortem revealed, in addition to the disease of the lung, caseous disease of the prostate and scrofulous kidneys.

Presented by Dr. Goodhart, 1876.

- 3375.** The heart, lungs, trachea, and bronchial glands of a child sixteen months old. Through all the substance of the lungs small grey miliary tubercles are thickly scattered. They have uneven outlines, but tend to the oval form ; they measure from half a line to a line in diameter ; some present small cavities at their centres. A few of them are in groups ; around all, whether scattered or grouped, the pulmonary tissues appear healthy. The bronchial glands are enlarged. The blood-vessels of the lungs were injected through the pulmonary artery.

The child's mother died of phthisis six days after its birth, and it was always sickly and emaciated.

From the Museum of George Langstaff, Esq.

3376. A similar specimen, not injected, and with fewer tubercles.

Presented by Sir James Paget.

3377. A portion of lung, in which there are "small scrofulous tubercles dispersed throughout its substance." (*Hunterian MS. Catalogue.*) They are like those last described ; a great many of them lie immediately beneath the pleura, projecting a little from the surface of the lung.

Hunterian.

3378. Section of a lung, tuberculous in nearly every part. The section has been made vertically through the upper lobe and a portion of the lower lobe of the lung. A narrow oblique white band indicates the complete union of the lobes by a layer of tough adhesions. The lung is enlarged, and made solid and heavy, by a diffuse infiltration of dull yellowish-white tuberculous matter through its whole texture. None of the original texture of the lung can be discerned ; scarcely even does a blood-vessel or air-tube appear pervious in it ; but it is uniformly solid, and its colour would be uniform were it not for the black matter which was deposited in it before the tuberculous disease, and by which the yellowish hue is variously streaked and shaded with spots and lines of bluish grey. In a few places small broken-walled cavities have been formed after the softening of the tuberculous matter.

Both layers of the pleura are adherent, thickened, indurated, and opaque ; the costal pleura, part of which is reflected, is highly vascular. About the apex of the lung there are, either in the costal pleura or in the adhesions just beneath it, numerous oval, flattened, miliary and crude tubercles, from half a line to two lines in diameter, of a yellowish-white colour, variously scattered, and in many places collected in groups and larger masses.

Presented by Sir James Paget.

3379. Section of the upper lobe of a lung, the whole of which, by tuberculous infiltration, is rendered uniformly solid, heavy,

and friable. The dull pale yellowish colour of the tuberculous matter is varied only by the spots and lines of black pigment previously deposited in the lung. Nothing can be seen, with the naked eye, of the proper substance of the lung, except the orifices of some of the larger blood-vessels and bronchial tubes. *Presented by Sir James Paget.*

- 3380.** Section of a lung, through nearly the whole of which tuberculous matter is infiltrated. The lung is enlarged, but hardly a portion of its proper tissue remains, except near its surface. The substance of the lung, or, rather, what occupies its place, is uniformly compact and heavy, but brittle; the surface of its section is smooth and firm, of a pale yellowish-white colour, marbled and mottled with various shades of grey by the black matter deposited in spots and lines. Near the lower (but, as the preparation is placed, the upper) part of the lung there are a few small cavities of very irregular shape, with walls formed by the adjacent firm tuberculous matter; and there are two similar cavities of rather larger size in the upper lobe. The pleura is thickened and very vascular, strongly contrasting with the interior of the lung, in which, infiltrated with tuberculous matter, hardly any appearance of blood-vessels can be discerned. Beneath the pleura there are numerous scattered and grouped yellowish miliary or crude tubercles. The cut surface of the lung is traversed by an oblique band passing from above downwards, a line in width; this is formed of the adhesions between the corresponding surfaces of the two lobes filled with tuberculous matter.

Presented by Sir James Paget.

- 3381.** Section of the upper and middle lobes of a lung, of which the blood-vessels were minutely injected from the pulmonary artery. In the lower part of the section there are a few distinct masses, each formed by the grouping and coalescing of several small, oval, yellowish-white miliary tubercles; higher up, the tuberculous matter is infiltrated through nearly all the pulmonary tissue, and at the apex of the lung there are several irregular cavities, bounded and

imperfectly partitioned from each other by indurated and tuberculous pulmonary tissue. There is an appearance of blood-vessels traversing the parts in which the tubercles are deposited ; these are probably the vessels of the tissue of the lung, which remain in the midst of the tuberculous matter deposited about them ; in the same parts the tubercles are mottled with grey by the black deposit.

- 3382.** A section of the lung of an Elephant, infiltrated with tubercle. In addition to large nodules of yellow material, there is a general infiltration of the lung-tissue, rendering it completely solid, except at the lower part of the preparation.

The animal had lived in the Zoological Gardens for 25 years, and was probably under 30 years of age at death. It was suddenly seized with a fit of epileptiform nature, followed by coma, and was, therefore, poisoned. Tubercular deposit was found in the pia mater.

Presented by the Zoological Society, 1876.

- 3383.** The lungs of a Canary-bird, in both of which there are comparatively large circumscribed masses of tubercle.

From the Museum of George Langstaff, Esq.

- 3384.** Section of the lung of a Binturong. Tuberculous matter is deposited in a circumscribed space at and below the surface of the lung. The deep outlines of this space are formed of the tissue between some of the lobules of the lung, thickened, indurated, and opaque white ; and several adjacent lobules beyond this space are surrounded with similarly thickened interlobular tissue. Within the space occupied by the tuberculous matter, there are appearances of its having been first deposited in the interlobular tissue, for the lines in which this tissue lay are filled with firm and compact tuberculous matter. In some of the lobules, also, so much tuberculous matter is deposited, that they appear solid, pale yellowish-white, like masses of tubercle, in which none of the original pulmonary texture can be discerned ; but in other lobules there remain distinct traces of the air-cells, which appear surrounded with

tuberculous matter ; as if this morbid substance first surrounded a lobule, and then gradually spread to its central parts and filled every air-cell in it. The vessels of the lung are minutely injected, but none are discernible where the tuberculous matter is deposited.

Presented by the Council of the Zoological Society.

3385. A vertical section of the lung of a Babyrussa, thickly beset with solid masses of opaque yellow tuberculous matter. Where these are, no trace of the pulmonary texture can be discerned ; the morbid substance appears to be deposited in every part of it. Some of the masses, which are very various in size and shape, are partially softened ; many have granules of calcareous matter scattered in them, in groups and tortuous and branching lines.

Presented by the Council of the Zoological Society.

3386. Three portions of different lungs from patients who, it was believed, were affected with bovine tuberculosis.

(a) The uppermost portion was taken from the posterior part of the apex of a lung, and shows a number of small spherical cavities with smooth walls ; the largest is hardly one eighth of an inch in diameter. The cavities appeared to have been formed by the softening of tuberculous nodules, and did not communicate with the small bronchi. The pulmonary tissue is consolidated, and infiltrated with yellowish tubercular masses and nodules.

From a man, aged 18, who, five months before admission to hospital, had to give up his occupation as a baker on account of weakness and shortness of breath. On admission, physical examination of the chest revealed disease on both sides. He died delirious two days afterwards.

In addition to disease of the lungs, there were tubercular out-growths on the serous membranes, and large encapsuled tubercular nodules in the liver, spleen, and portal lymphatic glands. (See 'Bovine Tuberculosis in Man,' by Charles Creighton, M.D., London, 1881, Case v. p. 33, and a drawing of the specimen, plate iii. fig. 9.)

(b) A portion of lung, containing a distinctly circum-

scribed, spherical, tubercular nodule having the appearance of concentric lamination. The lung is consolidated, and studded with small tubercles.

From a man, aged 22, who had also tubercular disease with ulceration of the kidneys, ureters, and bladder.

(c) A portion of consolidated lung, forming part of the wall of a large cavity which occupied the greater part of the upper lobe. The cavity has a dense smooth wall, and the surrounding tissue contains numerous rounded nodules of a yellowish-brown colour and "apparently encapsuled."

From a woman, aged 18, who was admitted to hospital in a moribund condition. There were many large cavities in the lungs, pendulous outgrowths on the pleuræ, and a beaded condition of the margin of the lung, due to tubercular growths. (See the same book, Case vii. p. 35, and plate ii. fig. 4, and plate iii. fig. 8.)

3387. Three lymphatic glands, exhibiting the same disease as the preceding.

(a) The largest specimen, at the lower part of the vessel, contains large yellowish-brown masses of tubercle. Its capsule is thickened and translucent.

From the same case as specimen (a) in No. 3386.

(b) The middle specimen is an enlarged pigmented gland containing a single oval nodule with a central calcareous point. (See the same book, Case xi. p. 42.)

(c) The uppermost is an enlarged abdominal gland, almost filled with two rounded whitish nodules of firm consistence.

From a child, aged 9 months, who died with general tuberculosis.

*Presented, with the preceding specimens,
by Dr. Charles Creighton, 1881.*

3388. A section of the lung of a Nylghau, which died with bovine tuberculosis. The lung is completely consolidated, and is thickly infiltrated with discrete and conglomerate nodules

of yellow tubercle of variable size. Many of the tubercles are calcified. The pleura is thickened, covered with adhesions, and with dendritic and minute rounded pedunculated outgrowths.

- 3388 A.** A portion of the diaphragm from the same animal. Projecting from its surfaces are rounded and flattened firm nodules, varying from small points to masses having a diameter of three quarters of an inch. Its surface is also beset with adhesions and dendritic outgrowths.

From the Zoological Society's Gardens.

*Presented, with the preceding, by
Dr. Charles Creighton, 1882.*

- 3388 B.** Portion of the lung of an Ox, covered with irregular lobulated masses of soft substance. Some of these contained pus, others a glairy substance of the colour of pus. The whole of one lung was thus diseased.

The disease is probably of the same nature as that shown in the preceding specimen.

Hunterian.

- 3389.** A lung, showing the destructive effects of tuberculous ulceration. The substance of both lobes has been so destroyed that there remains in the place of each only a large sac, the walls of which, from one to three lines in thickness, are formed by thickened pleura, and a thin layer of lung infiltrated with tuberculous matter. The internal surfaces of these sacs are intersected and coarsely reticulated by branching ridges and cords formed by the obliterated large blood-vessels; and many similar cords or bridges pass across the cavities from one wall to another. The cavities are lined by a layer of soft lymph, smoothly deposited over all parts of their inner surface, and perforated by many apertures, through which the ulcerated bronchi abruptly open.

Presented by Sir James Paget.

- 3390.** The lungs of a child affected with phthisis. There is

extensive consolidation throughout both ; but the central parts are more affected than the surface. Each contains several cavities, and the tissue between is indurated and grey. The lower parts contain tubercle in clustered grains and of rather gelatinous appearance. The larynx, intestine, and peritoneum were also tuberculous.

From a boy, 10 years of age, who had been ill for six months. It was first noticed that he had obstinate diarrhœa. This never ceased. His voice was husky for some time before death, and he could only speak in a whisper.

Presented by Dr. Goodhart, 1874.

- 3391.** Two portions of a lung, exhibiting the interior of the walls of a large tuberculous cavity extending through nearly the whole of the upper lobe. The internal surface of the cavity is rendered uneven by the branches of bronchi and blood-vessels which project upon it, like a coarse network of ridges, and by the orifices of several large bronchial tubes, in two of which portions of glass are placed. The cavity is lined throughout with a thin, filmy, false membrane, beneath which numerous minute masses of tubercle are deposited. The thin external layer of the pulmonary substance which remains, forming the wall of the cavity, is black and grey, and indurated; and all the adjacent parts of the lung, both in its interior and on its surface (from which a portion of thickened and adherent pleura has been reflected), are crowded with very minute grey and yellowish scattered tubercles. The part of the pleura which covered-in the cavity was firmly adherent to the interior of the chest. There was coincident tuberculous disease of the intestines and the mesenteric glands.

From the Museum of George Langstaff, Esq.

- 3392.** Section of a lung in an advanced state of tuberculosis. A large cavity represents the greater part of the upper lobe, while the lower is stuffed with aggregated yellow tubercles or lobules of caseous pneumonia. The pleura is everywhere much thickened, and was adherent to the wall of the thorax.

Both the costal and visceral layers of the pleura have been removed with the lung. The blood-vessels are injected.

From a dissection-subject, 1863.

3393. One of the lungs of a girl about 14 years old. The upper lobe has been almost wholly destroyed by tuberculous disease. One large cavity is formed in it, of which the walls, composed of the remaining pulmonary tissue, are not more than a line in thickness. The internal surface of the walls of the cavity is for the most part smooth, lined apparently with false membrane; it exhibits prominences formed by the trunks of large vessels branching on it; in some parts it is ulcerated, and in many tubercles are deposited upon or immediately beneath it. The outer surface of this part of the lung is covered with false membrane, and there are numerous tubercles in its substance. The lower lobe is nearly full of miliary tubercles and small cavities. The blood-vessels are partially injected. Tuberculous disease existed in the ileum and mesenteric glands.

From the Museum of George Langstaff, Esq.

3394. A portion of the apex of a lung containing two cavities. In the wall of the upper is a small aneurism on a branch of the pulmonary artery. A bristle is passed into the vessel.

From a patient who suffered from phthisis, and who died of profuse hæmoptysis.

Presented by Dr. Moxon, 1871.

3395. A portion of a lung affected with phthisis. In a small cavity in the lower lobe, seen on the surface of the section, there is a large dilatation of a branch of the pulmonary artery, into which a blue rod has been passed. The upper lobe was fibrous, and contained cavities of considerable size. The lower lobes were for the most part affected by miliary tubercle.

From a middle-aged man, who had been a free drinker. He had been wasting for ten months, and died suddenly from profuse hæmoptysis.

Presented by Dr. Goodhart, 1873.

- 3396.** A portion of tuberculous lung, containing a large cavity. In the wall of this is an aneurismal dilatation of a large branch of the pulmonary artery, the rupture of which gave rise to fatal hæmoptysis.

From a man, aged 24, in the Victoria Park Hospital in June 1870.

Presented by Dr. Peacock, 1876.

- 3397.** A lung, from a phthisical patient. In the wall of what was a small vomica, a dilated aneurismal branch of the pulmonary artery is seen. This has been slit open. The dilatation is chiefly towards the cavity, suggesting that one of the chief causes of its formation is the want of support which would have been derived from a sound state of the lung. The lung-disease appears to have been of the nature of caseous pneumonia.

From a man, aged 39, who had been ill three months. He died in the Royal Infirmary at Edinburgh in 1842, from rupture of the aneurismal sac and rapidly fatal hæmoptysis.

The disease is figured in the St. Thomas's Hospital Reports, vol. i. 1870, p. 88.

Presented by Dr. Peacock, 1876.

- 3398.** A portion of lung, exhibiting two fistulous canals (indicated by bristles), which extended from tuberculous cavities, through the pleura, and communicated with an abscess in the walls of the chest. The parts of the pleura adjacent to the openings in it are thickly covered with tough false membrane. The texture of the lung is hard, shrivelled, and very dark, with black deposit; the cavities which opened externally are not shown, but there is one at the apex of the lung, the walls of which are firm, dry, and lined with thin false membrane.

The patient was a girl 14 years old, who had signs of phthisis for two years. A swelling formed on the right side between the fourth and fifth ribs, and was attended with great pain and dyspnœa. It was opened, and gave exit to a large quantity of offensively smelling pus. The patient was much relieved, and pus continued for a long time to be discharged. But the opening gradually closed, and she died with hectic fever and diarrhœa. The rest of the lungs was full of tubercles: and there was tuber-

culous disease of the intestines and mesentery, with fatty degeneration of the liver.

From the Museum of George Langstaff, Esq.

- 3399.** Section of a lung, which had collapsed, and was compressed by air and fluid in the pleural cavity. Tuberculous matter is thickly deposited in the lung, in the forms of both granules and infiltration. There are also numerous cavities, of various, but chiefly small, sizes; and one of these, in its progress by ulceration, has extended through the pleura pulmonalis, making in it a smooth-edged oval aperture. In the inflammation of the pleura, which followed the escape of air and pus into its cavity, a thick firm layer of lymph has been deposited over the whole surface of the collapsed lung and of the costal pleura. The further collapse of the lung appears to have been hindered by a strong old adhesion, which fixed a part of the pleura on its upper lobe to the opposite part of the costal pleura. *Presented by Sir James Paget.*

- 3400.** The lower part of a sternum, with the cartilages of some of the ribs, and the integuments covering them. In the progress of tuberculous disease a part of one of the lungs became adherent to the posterior surface of the sternum. A large cavity formed in this part of the lung, and as the ulceration extended, it destroyed both the layers of pleura and the false membrane by which they were united, produced partial necrosis and ulceration of the sternum, and at length opened through the integuments of the front of the chest, from which the cavity continued for a long time to discharge. The preparation shows an irregular opening, with smoothly rounded margins in the integuments, the diseased part of the sternum beneath it, and, at the posterior part, a portion of the tuberculous cavity.

The patient was a man 40 years old. There was also extensive ulceration of the larynx and trachea, and many portions of the cricoid cartilage perished after ossification, and were coughed up. There were several other cavities in the lungs.

From the Museum of George Langstaff, Esq.

- 3401.** Portion of lung, made dense by the deposition of a pale yellow substance. Immediately beneath the pleura (a part

of which has been reflected) there is a deep ulcerated cavity, with soft granular margins. *Hunterian.*

- 3402.** The heart and part of one of the lungs of a Monkey. In the substance of the lung tuberculous matter is thickly and almost uniformly infiltrated, and there are numerous small irregular cavities variously opening into one another, and bounded only by the infiltrated substance of the lung. The pleura is very much thickened.

From the Museum of George Langstaff, Esq.

Calcareous Deposits in the Lungs, and Substances expectorated from the Lungs.

- 3403.** Portion of a lung, in which a large mass of calcareous substance is deposited immediately beneath the pleura, probably in the place where there was a tuberculous cavity. The surface of the lung is puckered in, like a cicatrix, over the deposit; and a thin layer around it is condensed, and closely applied upon it. Black matter is abundantly deposited in spots through the lung, and especially around and near the calcareous substance.

From the Museum of George Langstaff, Esq.

- 3404.** Small portions of earthy matter, one marked "From the lungs, immediately under a cicatrix;" the other, "From the pineal gland of a maniac." *Hunterian.*

- 3405.** A collection of small particles of earthy matter, from the lungs of an Ox. They consist of minute irregularly formed and wrinkled plates of bone-like substance, somewhat resembling portions of cancellous tissue.

This and the following specimen are probably examples of bovine tuberculosis.

Hunterian.

- 3406.** Section of a tumour, containing a large quantity of calcareous matter in small granules, which was formed in the substance of the lungs of an Ox. There were several tumours of the same kind. *Hunterian.*

3407. A nodulated mass of earthy matter, from the lung of a Turkey. *Hunterian.*
3408. Several small round masses of earthy matter, from the lungs of a Camel. *Hunterian.*
3409. Calcareous mass expectorated by a phthisical patient.
Presented by Dr. Peacock, 1876.

Morbid Growths.

3411. The greater portion of a left lung, containing very numerous cylindriciform, or nearly spherical, lobed and nodular masses of cartilage, varying in size from less than a line to an inch and a half in diameter. They appear to have originated within the branches of the pulmonary artery, and are imbedded in healthy pulmonary structure, from which, though closely connected, they can be easily and almost cleanly shelled-out. Each separate nodule is composed of tortuous or cylindriciform masses of pure hyaline cartilage held together, yet distinctly marked-off from each other, by an opaque-white fibrous capsule.

From a man, 37 years of age, from whom a large cartilaginous tumour of the right testicle had been removed. The disease appears to have been propagated along the lymphatic vessels of the testicle to the lumbar glands, where a mass was formed, part of which penetrated the walls and projected into the cavity of the vena cava inferior. By means of the current of blood in this vessel, the morbid material was probably conveyed to the smaller branches of the pulmonary artery, and in them laid the foundations for the immense and rapidly formed growth of cartilage seen in the preparation. The lungs, which were both similarly affected, weighed together $11\frac{1}{2}$ pounds.

For further details of the case see Prep. No. 117 A, and a paper by the donor, published in the 'Medico-Chirurgical Transactions,' vol. xxxviii. p. 247 (1855).

Presented by Sir James Paget.

3412. Dried sections of a tumour from the surface of a lung, in which a large quantity of earthy matter or bone is deposited.

From a boy whose thigh was amputated some weeks before his death for a large, very hard, and bone-like tumour of the femur. After the operation he had signs of disease of the lungs. After

death the disease was found to have returned in the stump of the femur, and on many parts of the pleura there were masses of diseased substance like that which is preserved, and like the tumour of the femur.

From the Museum of Sir A. P. Cooper.

- 3413.** Portion of lung, with several masses of hard, white, lobed, and obscurely fibrous, cancerous substance imbedded in it. Most of them are immediately beneath the pleura, and have flattened and scarcely projecting surfaces. The two largest are an inch in diameter; they project about a line from the surface of the lung and are adherent to the opposite surface of the pleura, a portion of which is preserved. The others are from a line to half an inch in diameter. Many of them are lightly tinged with the same black substance as is copiously deposited in the pulmonary tissue; and many are surrounded by narrow black areolæ formed of the same substance.

From a woman, 46 years old, whose breast had been removed for ulcerated cancer of three years' duration. The glands of the axilla were not diseased, and her general health appeared good at the time of the operation.

From the Museum of George Langstaff, Esq.

- 3414.** Portion of lung, in which large, hard, white, obscurely fibrous, cancerous tumours, like those last described, have been formed. The largest of them, of which a section is shown, projects from the surface of the lung, and forms a broad flattened mass nearly half an inch thick, which is firmly adherent to the opposite surface of the costal pleura.

Many other organs of the same patient were similarly diseased.

From the Museum of George Langstaff, Esq.

- 3415.** Portion of lung, containing several round lobulated masses of firm white cancerous substance. They are imbedded in apparently healthy pulmonary tissue: the largest of them project from the surface of the lung.

"Case of Cancer in the Breast.

"Mrs. Ad—m, about forty years of age, observed a lump in her right breast, and in about twelve months after, observing it to

become of a considerable size, she applied to me in the autumn of 1792. I ordered leeches, and the embrocation of Goulard, &c., which appeared at first to check its progress. I gave hints of my doubts about the cure, and endeavoured to lead the mind to an operation.

"She went into the country in the month of January, 1793, and about the beginning of February she returned to town; and the progress it had made in that time was very considerable; as also a small gland in the arm-pit had made its appearance.

"She also returned with a severe cough and shortness of breath, which I did not like, for I had often seen such after the disease had made considerable progress towards the source of the circulation, along the arm-pit, &c., which I conceived arose from the lungs being affected with the absorbed matter from the tumour, as it must circulate first through them before it got to the common circulation; but all this was only conjecture, for I had not been able to open such as had had this symptom, and seemed to have died of it.

"She now came to the resolution of having it removed, and I now wished to put it off altogether; but it was imagined that her cough and shortness of breathing was nervous, as it had come on so rapidly and with such violence.

"The breast and gland were removed, and in the time of removal the pectoral muscle was found to be contaminated, which parts were removed along with the tumour.

"Everything respecting the wound went on well, but the cough and shortness of breathing became worse and worse. She felt low, and often as if dying; her pulse quick, although not remarkably so; and, what was very singular, her tongue always kept clean and moist.

"All these symptoms increased upon her, and it was evident she had little or no chance of living, although all this time the sore was going on vastly well.

"She died about three weeks after the operation, and I wished to examine the body, which was allowed.

"The parts leading from the wound towards the heart in the course of absorption, viz. arm-pit and above the clavicle, were to all appearance sound. The lungs were found to be extremely diseased, and adhered everywhere to the parietes; not so much disease of their substance, as having everywhere disease in their substance, particularly in their adhesions; the mediastinum was particularly so.

"This disease was everywhere of one kind, and was in form of tumours; in largest quantity or masses in the mediastinum and anterior edge of the lungs, where they adhered to the mediastinum, which disease extended laterally and backward in the adhesions. The substance of the lungs everywhere was studded with them, some as small as peas, others as large as walnuts, &c.

"These tumours which were in the adhesions of the lungs were strong, but in the substance of the lungs they could easily be turned out, being attached very slightly. They were pretty firm

in consistence, and, when torn, they broke into pieces like a jelly, viz. not tough. These substances cannot be called tubercles or scrofulous swellings, and how to account for this formation (to my own satisfaction) is to me difficult.

“To suppose they arose from the absorption of the cancerous substance, and circulating immediately through the lungs, contaminating them and producing such effects, does not accord with the effects themselves or the parts in which they were produced.

“Parts were affected that seemed to be both out of the way of the course of absorption, and also out of the way of the circulation in the lungs; for the mediastinum and anterior edges of the lungs being diseased, one might suppose that the absorption took the route of the internal mammillary artery, but even this is not sufficient for the whole exterior surface of the lungs, nor does it accord with the contamination of the lungs from the cancerous absorption circulating through them; for then we should not have expected tumours, but rather a consolidation of the lungs. The short period in which these tumours, adhesions, &c., seemed to form is also uncommon.

“How far this is reducible to the case of Mr. Bennet, the coach-maker, and of the Duke of Queensberry’s cook, I will not say, but there is certainly a similarity.”—*Hunterian MS. : Cases and Dissections*, No. 75.

- 3416.** Portion of a lung, at the lower part of which is a tumour formed of soft, white, cancerous substance, partially tinged with black by the same material as is more abundantly deposited in the tissue of the lung.

From a woman, 47 years old, who died with several similar tumours in the lungs and omentum nine months after the removal of a cancerous breast.

From the Museum of George Langstaff, Esq.

- 3417.** Portion of a lung, in which there are numerous round and lobular masses of a soft and almost pulpy, vascular substance. Most of the larger masses are formed by the coalition of several small ones. The texture of the lung, in which they are loosely imbedded, appears healthy.

From a woman, 50 years old, who had a large tumour of the same kind in the abdomen.

From the Museum of George Langstaff, Esq.

- 3418.** Portion of a lung, in which there are several soft, round,

whitish sarcomatous tumours. Some are imbedded in the middle of the lung-tissue, others are deposited immediately beneath the pleura, and form prominent rounded projections upon the surface. The texture of the surrounding lung-substance appears healthy.

From a man, 19 years of age, who died with a very large medullary tumour, commencing in the upper part of the femur. See Prep. No. 1688, where the history of the case may be found. No. 517 is another piece of the same lung.

Presented by Cæsar H. Hawkins, Esq.

3419. A portion of a lung affected with medullary sarcoma. The pleura is much thickened, and the lung compressed by a thick layer of white growth, and in the substance of the lung are other well-defined circular nodules. The septum between the upper and lower lobes is marked by a thick layer of similar material.

The patient, a girl, aged $6\frac{3}{4}$, had been under the care of Mr. Cock, in 1866, for a tumour of the head of the humerus (Prep. 1647). The arm was amputated at the shoulder, but she died four months afterwards with a recurrence of the disease in the chest. Both lungs were extensively involved. The growth contained a large quantity of granular matter and cells of irregular shape. (For fuller notes see No. 1647.)

Presented by Edward Cock, Esq., 1867.

3420. Part of a lung, within and upon the surface of which are numerous soft, white, round masses of brain-like medullary cancer, of various sizes. Their substance is uniform and close; their cut surfaces present no appearance of fibrous structure, but rather appear spongy. The parts of the lung upon and in which they are seated appear healthy, and the connections between them very slight. The pulmonary vessels have been minutely injected, but little of the injected fluid has entered the tumours.

From the Museum of George Langstaff, Esq.

3421. A portion of a lung with the adjacent parts of the mediastinum, displaying a lympho-sarcoma which involves the bronchial glands and the lung. The substance of the lung

is the seat of soft white deposits which apparently originated in the mediastinum and bronchial glands. The left lung was everywhere adherent to the parietes and the pericardium, and in it are several cavities containing thick pus. The heart is preserved, No. 2963.

From a female, aged 19. She had been ill six months, her attack commencing with pain in the left side, cough, hæmoptysis, and sweating. The respirations were very rapid, and the pulse feeble and irregular. (Path. Soc. Trans. vol. xvi. p. 102.)

Presented by Dr. Peacock, 1876

- 3422.** A portion of lung, with the adjacent mediastinal tissues and pericardium affected by lympho-sarcoma. The disease commenced in the bronchial glands and lung.

From a woman, aged 43. Though subject to habitual cough, she had been seriously ill only six weeks. She had pain in the chest, much prostration, and the appearance of malignant disease. There was entire dulness at the upper part of the left chest, but extremely feeble inspiratory murmur. She speedily got worse and died; before death a band of hard enlarged glands extended up each side of the neck, and the left lung became almost impermeable to air.

At the inspection a tumour the size of the fist was found behind the upper part of the sternum and the sternal end of the left clavicle. This was in connection with masses of sarcomatous matter in the upper part of the left lung, which extended along the bronchus to the bifurcation of the trachea, and down the posterior mediastinum. The divisions of the bronchus in the lung were almost obliterated, and the branches of the pulmonary artery were flattened and compressed.

The case is recorded in the Transactions of the Pathological Society, vol. ii. p. 178.

Presented by Dr. Peacock, 1876.

- 3423.** A lung affected by cancer in the stage of ulceration. The lung is much condensed. Its section shows numerous circular and comparatively smooth-walled cavities both at the apex and base, while towards the lower part of the upper lobe thick white bands of new growth project into the tissue from the pleura, and occupy a space of considerable size. Part of the mass so formed has ulcerated away, exposing the lung underneath. The pleura is thickened

throughout, but towards the root of the lung it is converted into a tough white mass.

From a man, aged 31. He had been ill with cough eight months. The left side was wholly dull on percussion; the respiratory sounds were absent, and the local vibration feeble; but the heart was not displaced, or the intercostal spaces obliterated. He occasionally expectorated large quantities of pus mixed with blood. He died exhausted. Many other parts were affected in addition to the lung. One suprarenal capsule is preserved, No. 3684. The intestine, No. 2524. (Path. Soc. Trans. vol. xiv. p. 40.)

Presented by Dr. Peacock, 1876.

3424. Portion of lung, in which there is a round lobed mass of pale, whitish, spongy, cancerous substance, an inch in diameter. The adjacent substance of the lung appears healthy.

From the Museum of Sir A. P. Cooper.

3425. Two masses, probably consisting of medullary sarcoma.

They were expectorated by a man, aged 38, a printer. He had been ill twelve months with hæmoptysis. The physical signs under each clavicle were those of phthisis. He died exhausted, and in addition to evidence of phthisis and emphysema there were several masses of whitish-yellow deposit, resembling medullary sarcoma, in the anterior portion of the lung. The other viscera were healthy. (The masses were figured in the Trans. Path. Soc. vol. ix. plate iii. figs. 3 & 4, and the case is completed in vol. x. p. 65.)

Presented by Dr. Peacock, 1876.

Entozoa.

3426. Portion of the lung of a Lion, containing an acephalocyst hydatid in a cavity thinly lined with false membrane. A part of the surface of the lung is reflected, and the hydatid is laid open.

Hunterian.

3427. Hydatid cysts and membrane expectorated.

From a man, aged 31, a silk-weaver. He had long been delicate, though worse for fifteen months. His last illness commenced like hepatic colic with vomiting and jaundice, and the

pain recurred at intervals for about a month. He improved for a time, and was then again seized with pain under the right side, and he had now a cough and profuse expectoration. There was considerable dulness, with distension, on the right side from the third rib downwards. Below the nipple the respiration was inaudible. He was under observation for about seven months, and during that time he greatly improved, and he ultimately recovered. The case is recorded in the 'Edinburgh Medical and Surgical Journal,' vol. ii. 1850, pp. 33-37.

Presented by Dr. Peacock, 1876.

3428. Portion of lung, on the surface of which, and partly imbedded in its substance, is a thin membranous cyst covered with the pleura, from which an acephalocyst hydatid has been removed. *Presented by Sir William Lawrence.*

3429. Sections of the lung of a Sheep, the blood-vessels of which are injected. The pleura is much thickened, and the pulmonary tissue appears in several parts condensed and diminished in vascularity. Scattered through the substance of the lung are several hydatid cysts thickened and shrivelled. *From the Museum of George Langstaff, Esq.*

3430. Portion of the lung of a Cat, showing a tuberculous appearance due to inflammatory products around large numbers of the embryos of the *Olulanus tricuspis* (Leuckart).

At Christmas-time a whole family living at Gravesend, a man, his wife, and seven or eight children, were taken ill after eating a pluck of pork. They kept pigs, which had access to a very foetid ditch full of sewer-matter and decayed vegetable material.

The whole family and two cats and a dog were simultaneously attacked. The symptoms were those of loss of voluntary power. They felt ill, emaciated, had fever, and congestion of the lungs with cough. The muscular pains were great, especially in the calf, and so great was the paralysis that they lay in bed quite unable to move. One of the boys died after two months illness, but no inspection was made. A cat and dog also died at the same time. The other cat was killed and taken to the London Hospital, where it was examined at the suggestion of Mr. Gay. The lungs were in the state which the specimen shows. The muscles were healthy. The rest of the family recovered. Mr. Gay excised a piece of the deltoid from one of the boys when recovering. The muscle was carefully examined, but no parasites were found.

The zoological characters of the parasite were determined by Dr. Cobbold, F.R.S. The disease is called by him *Olulaniasis*, and is described in his 'Manual of Parasites of the Domesticated Animals,' 1874.

Presented by John Gay, Esq., 1874.

Diseases of the Blood-Vessels, and Hæmorrhage into the Lungs.

3431. Portion of a lung, exhibiting numerous effusions of blood, like small spots of purpura, beneath the pleura, and a smaller number of similar effusions in its substance.

From a child 8 months old. There were similar effusions in and beneath the skin, the mucous membrane of the trachea and bronchi, the pericardium and peritoneum, and the pia mater.

From the Museum of George Langstaff, Esq.

3432. Section of a lung, from a man in whom an aneurism of the aorta opened into the trachea, and several times discharged small quantities of blood into it. The lung presents numerous roundish spots, like blotches, from blood effused into the minute bronchi and air-cells. These spots, which are from one line to an inch in diameter, are firmer than the rest of the lung, but they are not hard or very compact; on their cut surface many air-cells appear open, not filled with blood, and have their ordinary characters. The outlines of the spots of blood are not well defined, but gradually shaded-off with lighter tinges of blood-colour. The parts of the lung adjacent to them are healthy. The bronchial tubes are nearly all full of coagulated blood.

3433. Another section of the same lung.

3434. Another section of the same lung. It is taken from the lower part of the lower lobe; and the air-cells in the apoplectic spots are more generally filled; so that the effused blood makes nearly solid masses.

The three preceding specimens presented by Sir James Paget.

3435. Part of the lower lobe of a lung, in which extensive hæmorrhage has taken place. Blood is diffused through a considerable extent of the pulmonary tissue ; and in several small circumscribed spaces, which present more or less of the form of groups of pulmonary lobules ; it is collected and coagulated in firm and nearly black well-defined masses. The effusions appear to be especially numerous and copious beneath the pleura.

The patient died with hæmoptysis.

From the Museum of George Langstaff, Esq.

3436. Section of a lung in the substance of which hæmorrhage occurred in two situations. The effused blood forms compact and hard masses. The blood has lost part of its colouring-matter, and presents on its cut surface a mottled aspect, with a mixture of different shades of deep crimson, brownish red, and very pale yellow. Its section also exhibits numerous small round and oval cavities, from a quarter of a line to two lines in diameter, with polished internal surfaces. *Presented by Francis Kiernan, Esq.*

Specimens of Diseases in, or involving, the Lungs in other parts of the Museum are :—Nos. 392, 448, 2751, 2753, 2789, 2858, 2860, 3163 to 3165, 3173, 3199, and 3394 to 3397.

Series XXXVI. INJURIES AND DISEASES OF THE LARYNX.

- Wounds : 3437 to 3439.
- Foreign Bodies : 3440 to 3442.
- Casts : 3443 to 3451 A.
- Calcification of Cartilages : 3452 to 3456.
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- Cicatrices : 3498 to 3501.
- Morbid Growths : 3502 to 3511.
- Tracheotomy and its results : 3512, 3513.
- Laryngotomy : 3494.

Wounds.

- 3437.** The larynx, trachea, and adjacent parts of a man who cut his throat several days before death. There is a wide gap between the thyroid and cricoid cartilages, the edges of which are covered with granulations. Smaller wounds extend from this, on each side, through the anterior part of the cricoid cartilage and the upper ring of the trachea.

The patient had diseased lungs, and his nose sloughed in consequence of the loss of blood from the wound.

Presented by Joseph Swan, Esq.

- 3438.** The larynx and adjacent parts, showing injuries inflicted in suicide. The incision entered the larynx at the base of the epiglottis across the thyro-hyoid membrane, the vessels on both sides being uninjured. From the laryngeal aspect a large blackish swollen mass of tissue extends downwards from the cut to the false vocal cords, which are distended and pushed down upon the true cords. Below this the mucous membrane looks shaggy from thickening

and the formation of lymph upon it. The epiglottis appears healthy.

Presented by Dr. Peacock, 1876.

- 3439.** The tongue, larynx, pharynx, and a portion of the integuments from a man who cut his throat between the os hyoides and the thyroid cartilage. A large aperture remains in the situation of the wound, exposing all the anterior surface of the epiglottis. The integuments around it are completely cicatrized, and so contracted and sunk in, that the lower border of the cicatrix is smoothly continuous with the anterior surface of the epiglottis. The beard has grown almost to the margin of the aperture. *Hunterian.*

Foreign Bodies.

- 3440.** A larynx, with the pharynx and tongue of a man who was suddenly suffocated by a large piece of chewed meat passing into his larynx when he was trying to vomit. The meat is suspended over the arytenoid cartilages; a portion hangs in the pharynx, but the greater part of it is in the larynx, and is sufficiently large to have filled the whole of its cavity from below the epiglottis to the first rings of the trachea. *From the Museum of George Langstaff, Esq.*

- 3441.** The larynx, trachea, and first portions of the bronchi of a child two years and a quarter old. A bean, measuring about three-quarters of an inch in length and half an inch in breadth, is lodged in the orifice of the left bronchus, and rather overlaps that of the right bronchus.

The child died twenty-four hours after the passage of the bean through the larynx.

From the Museum of Sir A. P. Cooper.

- 3442.** The larynx, trachea, bronchi, and part of the right lung from a person who died in consequence of the lodgment of a piece of bone in the right bronchus. The bone is seen in the preparation in the situation in which it was found at

the post-mortem examination. It was firmly impacted in the orifice of the third branch of the bronchus, which passed into the middle lobe of the lung, at the distance of an inch and a half from the point of bifurcation of the trachea. The mucous membrane around it was of a vivid red colour, but gradually became paler towards the left bronchus, where, as well as in the trachea, it presented its usual colour. The lower two thirds of the lung were of an ashy slate-colour, of dense consistence, infiltrated with a purulent fluid of a very offensive odour. The upper portion of the right lung, and the whole of the left, were healthy.

From a married woman, 46 years of age. The bone accidentally passed into the windpipe, whilst she was eating broth, on the 10th of May, 1849. She was immediately seized with spasmodic cough and threatened suffocation, and some minutes elapsed before she recovered herself. On the following day her voice was hoarse; the respiratory movements were slow, not averaging more than ten or twelve per minute, and accompanied by a wheezing noise; and she was distressed by a constant short cough, aggravated on full inspiration. There was pain at the upper part of the chest, which she referred to the junction of the second rib with the sternum, and at the back of the neck. On ausculting the chest a marked difference was found on the two sides; on the right, the breath-sound was obscured, the natural vesicular murmur being scarcely perceptible, and a "prolonged and peculiar rhonchus" was heard throughout the lung, but most distinctly over the point to which the pain was referred, and more audibly marked during expiration; on the left side the respiratory sounds were feeble, but free from rhonchus, and both inspiration and expiration were lengthened.

The distress occasioned by the presence of the foreign body gradually increased; air seemed to enter freely into the upper part of the lung only; the expectoration became copious, purulent, and extremely offensive; profuse night sweats, alternating with paroxysms of fever, came on, and she died on the 5th of July.

The case is published in detail in the 'Medico-Chirurgical Transactions,' vol. xv. p. 1 (1850).

Presented by John Gregory Forbes, Esq.

Casts of the Bronchial Tubes.

3443. A *Bronchial Polypus*; a small portion of coagulated lymph, coughed up from the lungs. It is finely ramified, as if formed in some of the smaller bronchial tubes.

A much larger portion from the same patient is preserved in No. 143, and the history is recorded, with its description, in Vol. i. p. 58.

Hunterian.

3444. Several portions of coagulated lymph, forming branched tubes moulded within the bronchi of the second, third, and many successively inferior orders.

They were expectorated by a person suffering with signs of bronchitis.

Presented by Dr. Jenner.

3445. Specimens of finely branched fibrinous casts from the bronchial tubes.

They were expectorated by a boy, aged 11. He had always been delicate, and when about 6 years old had an attack of influenza. From that time he was subject to cough and expectoration, and spat-up pieces of membrane at intervals. His mother's family were healthy; but on the father's side there was a strong tubercular tendency, and two of six children had died, one of croup and one of consumption. The case is fully reported, with remarks upon the nature of the disease, in the 'Medical Times and Gazette,' vol. ii. p. 658.

Presented by Dr. Peacock, 1876.

3446. Some small masses of a fibrinous branched coagulum.

They were expectorated by a man, aged 27. They came away in the form of rounded pellets, but when soaked in water, unfolded into their present form. He had been a lighterman. His indisposition commenced with repeated attacks of epistaxis. For six months before his attendance at St. Thomas's Hospital he had had a cough, and the masses were expectorated at uncertain intervals. There was evidence of consolidation of the lung at one apex. Under chalybeates he improved in appearance, and the expectoration ceased. (Path. Soc. Trans. vol. ix. p. 53.)

Presented by Dr. Peacock, 1876.

3447. A quantity of solid branched fibrine, removed from the bronchial tubes of a patient who, during life, had signs of croup, and coughed-up smaller portions of similar substance. They appear to have nearly filled the tubes in which they lay.

From the Museum of George Langstaff, Esq

3448. Several small masses of a firm brown substance, probably coagulated lymph, from the lungs. *Hunterian.*

3449. Moulded coagula expectorated after copious hæmoptysis. They are of large size, and have apparently come from one of the larger bronchi. When recent they were of a whitish-yellow colour, and were intermixed with coagulated blood. On microscopic examination, they showed a homogeneous material, composed of delicate fibrillæ and granular matter mixed with blood-globules, exactly resembling the coagula found in the cavities of the heart.

From a gentleman, aged 45. They were expectorated after ten or twelve days of copious hæmoptysis, and after their discharge this symptom ceased entirely. The patient had been of intemperate habits, and he died not long afterwards of phthisis. (Path. Soc. Trans. vol. xxiv. p. 20.)

Presented by Dr. Peacock, 1876.

450. A branched cast, expectorated from the bronchial tubes. It consists of blood and inflammatory matter.

It was obtained from a gentleman, after an attack of hæmoptysis. He had long laboured under asthma, dependent on emphysema of the lungs, and ultimately died of phthisis. (Trans. Path. Soc. vol. vii. p. 54.)

Presented by Dr. Peacock, 1876.

451. Some casts of the bronchial tubes, composed of blood coagulated and partly decolorized.

They were expectorated, with profuse discharge of blood, by a gentleman who probably had syphilitic ulceration of some part of the faucial mucous membrane.

Presented by Dr. Peacock, 1876.

- 3451 A. "Casts of the bronchial tubes in coagulated blood, expectorated by a patient," "who was living twelve months after the hæmoptysis which produced them." "Of the four casts, three are nearly the same in size, about two inches long and a quarter of an inch in diameter at the thickest

part. Two of these are much branched. The fourth cast is very much larger, being of the size and shape of a little finger," and not branched.

"The patient was a man, aged 43 years, who stated that for the last four months he had been losing flesh, and had occasionally, after coughing, suffered with streaky hæmoptysis." "Examination of the chest showed some slight consolidation at the left apex, with some softening." "For two months he went on fairly well, but was then attacked by severe hæmoptysis, and on examination the apex-signs were found to remain the same, but the base on that side had become dull, with fine crepitation and feeble respiration." This condition was probably due to the gravitation of blood to the base of the lung, which had come from the apex. Two months later he was seized with a similar attack of hæmoptysis, the physical signs being the same as before; he then expectorated the casts, "with great difficulty, though with considerable relief to his dyspnœa." (See Trans. Path. Soc. vol. xxxi. p. 53.)

Presented by Dr. Samuel West, 1882.

*Degeneration of the Cartilages of the Larynx,
Trachea, and Bronchi.*

3452. A larynx and trachea, with their cartilages calcified. A small portion on each side near the angle of the thyroid cartilage is not calcified through its whole thickness; but with this exception the calcification is complete. *Hunterian.*
3453. The lower part of a trachea, with the bronchial trunks. Nearly all the cartilages are completely calcified. *Hunterian.*
3454. A thyroid cartilage, partially calcified. It has been macerated, and shows the exactly symmetrical manner in which the calcification has taken place, and that it has occurred first at the posterior and lower borders, and the cornua of the cartilage. *Hunterian.*
3455. A thyroid cartilage, completely calcified. *Hunterian.*
3456. The half of a hyoid bone, completely calcified. *Hunterian.*

Abscess and Necrosis of Cartilage.

3457. A larynx, with part of the trachea. An abscess formed around the greater part of the cricoid cartilage, between its surface and its perichondrium. The posterior three fourths of the cartilage are exposed in the cavity in which the pus collected; the anterior fourth appears healthy. No ossification of the exposed cartilage has taken place, nor any attempt at exfoliation. The abscess opened into the larynx near the posterior extremity of the vocal cord. There appears, also, to have been another smaller abscess at the right side of the epiglottis.

From the Museum of Robert Walker, Esq.

3458. A larynx showing numerous small abscesses at the root of the epiglottis, between it and the hyoid bone.

From a lad of 16, who died with acute periostitis of the humerus. During the last two days of his life, he had become very hoarse, and complained of dysphagia. The case is described in the Jacksonian Prize Essay for 1863, MS. Appendix, Case 41.

Presented by Dr. Morell Mackenzie.

- 3458 A. A larynx from a case of enteric fever, with an ulcer of the mucous membrane immediately behind the posterior attachment of the right vocal cord. The ulcer extends into a small abscess-cavity bounded by the perichondrium of the arytenoid cartilage, which lies within the abscess, bare and necrosed.

Presented by Dr. Goodhart, 1878.

3459. The left horn of an os hyoides, expectorated after necrosis and exfoliation.

The patient, a woman 28 years old, laboured under dyspnœa for a fortnight, and it became at last so urgent as to threaten suffocation. Tracheotomy was performed, and gave immediate relief. On the thirteenth day after the operation the patient, in a violent fit of coughing, discharged this portion of bone. She afterwards recovered.

From the Museum of Robert Liston, Esq.

3460. A portion of bone coughed up by a nobleman. It is hard bone, cancellous, except on one surface, where it is polished and ivory-like, or like the articular end of a bone long subject to friction after the removal of its cartilage. It has somewhat of the form of an arytenoid cartilage, its polished surface corresponding to the base of the cartilage; and, possibly, it is part of an arytenoid cartilage ossified, necrosed, and separated through an ulcer of the larynx. *Hunterian.*

Disease of Laryngeal Joints.

3461. The skeleton of a larynx, with disease of the thyro-hyoid articulation and the formation of a joint which, during life, was the subject of hydrarthrosis and frequent dislocation. There is considerable calcification of the left thyro-hyoid ligament, with an appearance of an intermediate piece of bone articulating above with the cornu of the hyoid bone, and below with the left cornu of the thyroid cartilage.

From a man, aged 45, who died with phthisis. He had often complained of a sudden click in the left side of his neck, which produced a sensation of something sticking in his throat. This depended upon dislocation of the left horn of the hyoid bone, and it could be reduced by throwing the head backwards to the right side and by suddenly relaxing the lower jaw. (Trans. Path. Soc. vol. x. p. 66.)

Presented by Dr. Duncan Gibb.

Simple Inflammation.

3462. The tongue and larynx of a child, aged $3\frac{1}{2}$ years, who died ninety-seven hours after swallowing boiling water. The mucous membrane covering the epiglottis is much corrugated.

The child was admitted to the hospital for slight dyspnœa, but this increased so rapidly that tracheotomy became necessary. Death took place from extensive pneumonia. (Vide Jacksonian Prize Essay, MS. Appendix, Case 2.)

Presented by Dr. Morell Mackenzie, 1863.

Croup and Diphtheria.

3463. The larynx and trachea, with the soft palate, tonsils, and other adjacent parts of a boy 6 years old, who died with

croup. The cavity of the larynx, from the upper margin of the epiglottis to the ventricles, is lined with a thin loose layer of lymph ; and scattered portions of lymph are adherent on parts of the mucous membrane lower down. The whole of the mucous membrane is swollen. The tonsils are enlarged.

From the Museum of George Langstaff, Esq.

3464. The larynx, trachea, and thyroid gland of a child. An irregular and very thin layer of lymph is deposited within the larynx and trachea, extending from the posterior surface of the epiglottis, on which it lies in thin flakes, to about an inch below the cricoid cartilage. The vessels of the thyroid gland are minutely injected.

From the Museum of Sir A. P. Cooper.

3465. The larynx and trachea of a child who died with croup. The mucous membrane, from the upper margin of the epiglottis to the bifurcation of the trachea, has a thick layer of coagulated lymph upon its surface. The layer, which probably formed a complete tube, is thickest in the trachea ; it is thin and flaky upon the epiglottis and in the ventricles of the larynx.

Hunterian.

3466. A larynx, trachea, and tongue, from a girl 4 years old, who died with croup. The lower surface of the epiglottis is covered with a thin layer of lymph, and a tube of moderately firm, granular, false membrane, nearly half a line in thickness, extends from the vocal ligaments to the bifurcation of the trachea. The tonsils are enlarged.

From the Museum of Robert Liston, Esq.

3467. The larynx of a child. The tonsils are much ulcerated ; the epiglottis congested and thickened. A thin layer of hardly consistent membrane extends down to the bifurcation of the bronchi.

From a child, aged 6 years, who died of diphtheria, after four days illness. She had no laryngeal symptoms. The sister of

this child also died of diphtheria, and the larynx is preserved in No. 159, Vol. i. p. 65.

Presented by H. Trentham Butlin, Esq., 1871.

3468. A larynx, with the trachea and large bronchi, exhibiting the effects of croup in an adult. The interior of these parts is lined with a layer of coagulated lymph, forming a membranous tube, of uniform, smooth, and compact texture, which adheres loosely to their walls, and has been torn across just above the bifurcation of the trachea. The thickness of this membrane increases from above downwards, till, in the bronchi, it is equal to a quarter of a line. On the posterior surfaces of the epiglottis and of the arytenoid cartilages there is a thinner deposit of lymph in small flakes. Suspended by a separate thread is a tubular portion of lymph about five inches long, which was coughed-up four days before death.

The patient was a lady, 75 years old, who had signs of croup for ten days. She died in a violent fit of coughing, during which it is supposed that the false membrane was torn across, and caused suffocation by the loose portion closing up the bronchial tubes.

The preparation is engraved in Mr. Liston's 'Elements of Surgery,' ed. 1840, p. 441.

From the Museum of Robert Liston, Esq.

3469. The larynx and adjacent parts of an adult, who died with "putrid sore throat." The mucous membrane lining the larynx is swollen, and a thin imperfect layer of coagulated lymph is deposited loosely on its inner surface. *Hunterian.*

3470. The tongue, pharynx, and larynx of a man who died of diphtheria of sporadic occurrence. A thick and firm membranous exudation covers the base of the tongue, the tonsils, velum, uvula, and glossal surface of the epiglottis. It extended through the glottis, gradually losing its membranous characters, and assuming those of viscid mucus. This change has disappeared in the process of preparation. The tonsils are swollen and ragged in appearance from sloughing of their substance. *Presented by Dr. Peacock, 1876.*

Inflammation in other Specific Fevers.

3471. The larynx and trachea of a child, who died with small-pox. The mucous membrane is slightly thickened, and there are numerous delicate flakes of lymph upon its surface.

Presented by Joseph Swan, Esq.

Tubercle.

3472. A larynx, with a part of the trachea, exhibiting ulceration of the mucous membrane. Immediately around the vocal cords the ulceration is diffuse and irregular, but symmetrical; it penetrates, at some parts, the whole thickness of the membrane, and has exposed, on each side, a similar small portion of ossified arytenoid cartilage. It is probable that this ulceration was of tuberculous origin; but around its margins, at some distance from the vocal cords, and on the posterior surface of the epiglottis, there are several ulcers of different character. These are distinct, circular, or oval, about a line in diameter, quite superficial, and just like the ulcers of aphthæ; they are irregular in their arrangement.

“The Honourable Mrs. Dalrymple, aged 28 when she died. She was remarkable for her talents in music, especially vocal. She had been always of a scrofulous habit, having the glands of the neck often swelling to a considerable size from the ear to the clavicle.

“She caught cold, which fell upon her lungs, and, not considering it to be serious, she regarded it but little till it became very violent.

“The consumptive symptoms increased, producing all the common symptoms, excepting [that] what she spit was more like the common mucus of the nose than matter, although a yellowish substance was often mixed with it.

“Some months before she died she lost her voice, could hardly articulate, could not get the sound above what is called her breath or rough whisper, which was extremely hoarse. There was also a difficulty in swallowing, but she could swallow a solid much better than a fluid.

“*The appearances upon opening the body.*—On opening the chest I found the cartilages of the ribs considerably ossified in their centres. We found the pericardium filled with water, in quantity above four ounces. The lungs were full of tubercles,

many come to suppuration, and the trachea filled with the matter, as also mucus from the inside of the cells. The lungs adhered to the pleura. The glottis and root of the epiglottis were ulcerated (which we find sometimes to be the case in complaints of the lungs), and the tips of the arytenoid cartilages were laid bare, and upon examining these cartilages they were found to be entirely bony. Both the thyroid and cricoid cartilages were in part ossified.

"The lymphatic glands in the mesentery were much enlarged, which in some degree might obstruct the nourishment getting into the constitution. The lacteals were in many places filled with chyle, although what she had eaten for some time before death must have been but very trifling. Probably the chyle being found in the lacteals was owing to the glands being diseased. These vessels appeared, also, to be diseased in many places, especially where they run upon the intestines; there they were thick in their coats, as also impervious in many parts.

"This case was similar to General Amherst's, as also the appearances after death, especially the larynx; but as the General lived longer under the disease, the cartilages were more ossified, and became anchylosed."—*Hunterian MS. : Cases and Dissections*, No. 82.

Hunterian.

- 3473.** A larynx and adjacent parts, laid open from behind. The mucous membrane over the epiglottis and the aryteno-epiglottidean folds is swollen and rugose. There is considerable thickening over the true vocal cords, and a small ulcer parallel with them near the hinder part of each. Over the inner surface of the thyroid cartilage and trachea are numerous small superficial ulcerations.

From a man, who died of chronic inflammatory disease of the lung without evidence of tubercle.

Presented by Dr. Goodhart, 1876.

- 3474.** A larynx, with the base of the tongue and adjacent parts, from a person who died with pulmonary phthisis. The mucous membrane of nearly the whole interior of the larynx is superficially and irregularly ulcerated. About the margins of the chief and widespread ulceration there are a few small superficial aphthous ulcers, like those described in No. 3472; and it is probable that all the ulceration had its origin in such as these spreading and coalescing. The laryngeal ventricles are almost obliterated by the swelling

of the membrane. Deep ulcerations extend into the substance of the tonsils. *Hunterian.*

3475. A larynx and trachea, with the main bronchi, exhibiting extensive tuberculous ulceration of the mucous membrane, especially of the posterior wall of the trachea. Two of the ulcers are more than an inch in diameter ; and both these, and others of small size, have penetrated through the mucous membrane. The outlines of all are irregular ; their margins abrupt, not elevated ; their bases smooth, or in some instances granulated. There are also numerous round, small, superficial ulcers, many of which lie in rows along the interspaces between the cartilages of the trachea.

3476. Part of a larynx, of which the mucous membrane above the vocal ligaments is beset with minute superficial ulcerations. At the posterior extremity of the left laryngeal ventricle there is a deep, probably tuberculous, ulcer, exposing a part of the arytenoid cartilage. The bursa on the front of the thyro-hyoid membrane is enlarged.

From the Museum of Robert Liston, Esq.

3477. A larynx, from a man who died with pulmonary phthisis. All the mucous membrane of the interior of the larynx, from the middle of the epiglottis to a short distance below the vocal ligaments, is irregularly but symmetrically ulcerated. Most of the ulceration is superficial ; but at one part, indicated by a piece of straw, it has penetrated through the submucous tissues. At the angle of the thyroid cartilage, also, the whole of the mucous membrane is destroyed, and a portion of the cartilage, ossified and necrosed, is exposed. Through this, an aperture leads to the exterior of the larynx into the cavity of an abscess, which projected beneath the integuments in front of the thyroid cartilage.

From the Museum of George Langstaff, Esq.

3478. A larynx showing the effects of laryngeal phthisis. There is great thickening of the mucous and submucous

tissues, and a large amount of deposit has taken place between the inner surface of the alæ of the thyroid cartilage and the mucous membrane covering the true and false vocal cords. Both the ventricles are completely obliterated. The deposit in the tissues over the arytenoid cartilages has formed two large roundish tumours. The false cord on the left side is smooth, indurated, and prominent ; the true cord on the same side is thickened ; on the right side the false cord is irregularly ulcerated and projecting ; the true cord is effaced by interstitial deposit. There is also much ulceration in several parts.

From a man, aged 35, who had aphonia and laryngeal pain for the last four years of his life. The lung-disease was not very marked. He died with exhaustion from diarrhoea. (Jacksonian Prize Essay, 1863, MS. vol. i. p. 68.)

Presented by Dr. Morell Mackenzie, 1863.

3479. A larynx showing the effects of laryngeal phthisis. The mucous membrane is thickened and ulcerated. The left false cord is very much thickened and projects into the cavity of the larynx ; and there is a large ulcer on the left side posteriorly between the true and false cords, which exposes the interior of the ventricle.

From a man, aged 42, who had aphonia for eighteen months, with dysphagia for the last six weeks. The lung gave evidence of advanced phthisis, and he died soon after he came under observation.

The case is described in the Jacksonian Essay for 1863, MS. Case 52, Drawings, Table ii. fig. 20.

Presented by Dr. Morell Mackenzie.

3480. A larynx showing the effects of laryngeal phthisis. There is general thickening of the mucous membrane, and the edges of the epiglottis are destroyed by ulceration, so that the denuded cartilage is seen, the epiglottis being slightly involuted.

From a man, aged 30, who suffered with dysphagia and loss of voice. He had been ill for a year, and died with phthisis.

The case is recorded in the Jacksonian Prize Essay for 1863. See MS. Appendix, Case 50 ; and Drawings, Table ii. fig. 18.

Presented by Dr. Morell Mackenzie, 1863.

3481. A larynx, the mucous membrane of which is affected with follicular ulceration. There are numerous small ulcers covering the whole of the mucous membrane of the larynx from the epiglottis, which is also affected, to the upper margin of the trachea. The ulcers are so small and so numerous, and there is so much swelling of the mucous and submucous tissues, that the appearance is one rather of mammillation than of ulceration.

The patient, a man aged 53, died with cavities in his lungs nine months after the commencement of laryngeal disease.

The case is described and figured in the Jacksonian Prize Essay for 1863, MS. Appendix, Case 51, and Drawings, Table ii. fig. 19.

Presented by Dr. Morell Mackenzie, 1863.

3482. A larynx, showing the effects of tubercular laryngitis. A large ulcer occupies the posterior attachment of each vocal cord, excavating deeply in front of each arytenoid cartilage. There is also extensive follicular ulceration of the mucous membrane over the epiglottis and trachea.

From a patient who died of tubercular phthisis.

Presented by Dr. Goodhart, 1875.

3483. The larynx, from a case of tubercular phthisis. The mucous membrane above the vocal cords is swollen, irregular and ragged-looking, as if the mucous and submucous tissues were much thickened by inflammatory matter. Numerous yellow points and small ulcers may also be seen. Below the vocal cords the mucous membrane of the trachea is also superficially ulcerated, looking flocculent over the greater part of its surface.

From a man, aged 23, who died of laryngeal phthisis, and who also had congenital contraction of the orifice of the pulmonary artery. He suffered at first from hoarseness, and latterly from entire aphonia. The symptoms extended over five years. The lungs were tuberculous and contained cavities. He died with symptoms of cerebral disease. The brain was much congested and the membranes opaque, but there were no appearances of tubercle.

Presented by Dr. Peacock, 1876.

3484. A larynx, with the upper part of the epiglottis wanting, showing extreme tubercular disease of the whole of the mucous membrane. The surface is irregular and rugose from swelling and thickening of the mucous and submucous textures, and is pitted-over with numerous small irregular ulcers. The mucous membrane of the trachea is also finely honeycombed by ulceration.

3485. A larynx, in which a thick, irregular mass of soft, probably tuberculous, substance is formed between the inner surface of the alæ of the thyroid cartilage and the mucous membrane. The greater part of the mass lies on the inner side of the left ala ; it is here, in some parts, three-quarters of an inch thick ; it involves, and has in part destroyed, the cricoid and the right arytenoid cartilages, has pressed-in the left vocal ligament and laryngeal ventricle, and has produced at the lower anterior part extensive ulceration of the mucous membrane.

The patient died exhausted after excessive dyspnœa.

From the Museum of Sir A. P. Cooper.

Syphilis.

3486. A larynx, with the pharynx and other adjacent parts. The mucous membrane at the upper and back part of the larynx is indurated, and so thickened and oedematous, that the space bounded by the epiglottis, the arytenoid cartilages, and the folds of membrane between them, is reduced to a narrow vertical chink, from half a line to two lines in width. The interior of the larynx, so far as it can be seen through this narrow aperture, is irregularly ulcerated. Anteriorly, there is an opening at which tracheotomy was performed, and close by its right side a large vein, into which a piece of whalebone is passed.

The patient was a man 45 years old, who had signs of disease of the larynx for eight months. Three days before his admission into the Edinburgh Royal Infirmary his dyspnœa became more than usually severe. Tracheotomy was performed, with some difficulty, in consequence of the ossification of the rings of the



trachea ; and on the second day after it the dyspnœa and other symptoms were entirely relieved. On the morning of the third day, however, a fit of suffocation ensued, the tube introduced into the trachea being obstructed with mucus. The tube was changed and strictly attended to, but fits of suffocation recurred, respiration became very much oppressed, and the patient died before noon.

From the Museum of Robert Liston, Esq.

3487. A larynx, showing a large ulcer at the posterior part of the left false vocal cord communicating with the ventricle. Both true and false cords are extremely thick and ulcerated on the left side. On the right, a fold of thickened mucous membrane protrudes from the ventricle so as to give almost the appearance of an outgrowth; the false cord on this side is much thickened, and the mucous membrane over the true cord is ulcerated so as to expose its elastic tissue. Other smaller ulcers are seen at different parts.

From a man, aged 35. Twelve years before death he had syphilis. Two years after this he had an obstinate skin-affection which was cured with mercury, and later still ulceration and loss of the nasal bones. Aphonia had existed four months. He had much bronchitis and a cavity at the apex of the left lung.

The case is recorded in the Jacksonian Prize Essay for 1863, MS. Appendix, Case No. 44. The appearances during life are shown in Table ii. fig. 15.

Presented by Dr. Morell Mackenzie.

3488. A larynx, with the pharynx, tongue, and other adjacent parts. There is a diffuse, ragged, syphilitic ulceration of the mucous membrane of the pharynx and fauces, and the membrane which covers the upper and back part of the larynx is so swollen by thickening and œdema that the superior opening of the larynx is closed ; its situation is indicated only by a vertical groove, at which the opposite folds of mucous membrane meet in the middle line. It may be remarked how, in this œdematous state of the membrane, the lateral margins of the epiglottis are turned backwards and inwards, curving till they nearly meet each other, so as to give the epiglottis a peculiar elongated and narrow shape, making it also stand up nearly vertically

and greatly contributing to the narrowness of the entrance into the larynx.

From a man, 42 years old, who had had syphilis, and had taken large quantities of mercury. He was admitted into the Edinburgh Royal Infirmary with symptoms of œdema of the larynx, which had existed for several weeks. Tracheotomy was performed on account of a paroxysm of dyspnœa threatening suffocation; and immediately after the operation the patient slept soundly for nearly six hours. He then awoke, and, before assistance could be afforded him, died suffocated. The preparation is engraved in Mr. Liston's 'Elements of Surgery,' ed. 1840, p. 442.

From the Museum of Robert Liston, Esq.

3489. A larynx, with the tongue and other adjacent parts. The mucous membrane covering the upper and back part of the larynx is, just as in the last specimen, œdematous and indurated, and the superior aperture of the larynx is reduced by the thickening of all its membranous boundaries, and by the recurvation of the epiglottis. The space between the epiglottis and the arytenoid cartilages is reduced to a vertical aperture about half an inch long and two lines wide. The interior of the larynx is superficially ulcerated.

The patient was a man, 23 years old, who for several days had gradually increasing symptoms of œdema of the larynx. One day, while sitting quietly, he suddenly got up and ran to the door, exclaiming that he could get no air; in a few seconds he dropped, and died suffocated.

From the Museum of Robert Liston, Esq.

3490. A larynx and trachea, affected with what was considered to be syphilitic ulceration. In the larynx and trachea there are two large ulcers of irregular form, with smooth edges slightly overhanging their equally smooth bases; they have removed the whole thickness of the mucous membrane. Over each arytenoid cartilage there is a small, circular, deep ulcer, exposing part of the cartilage ossified and necrosed. The right ventricle of the larynx is filled up, either by an irregular thickening of the mucous membrane, or by a layer of granulations from the surface of an ulcer, which extends over the right ala of the thyroid cartilage and nearly all the epiglottis. *Presented by Sir W. Blizard.*

3491. A larynx, showing the results of syphilitic laryngitis. The surface of the epiglottis, as well as the interior of the larynx, is warty-looking; the vocal cords near the arytenoid cartilages are irregular and ulcerated; and below the vocal cords the mucous membrane is considerably eroded.

From a male, aged 30, who suffered with aphonia, cough, and emaciation.

Presented by Dr. Lediard, 1875.

3492. A larynx, part of the trachea, and the base of the tongue, with several, probably syphilitic, ulcers. Immediately below each vocal ligament there is a large ulcer. That on the right side extends below the whole length of the ligament; it is oval, deep, and has an irregular granulated base. That on the left side is more superficial, and has, for the most part, a smooth and rather polished surface, as if partially filled up and cicatrised. The adjacent mucous membrane is much swollen; and over the left arytenoid cartilage it is deeply wrinkled. There are ulcers, also, on the epiglottis and on the tonsils: that on the former is circular and superficial, with a very slightly elevated border; those on the latter are deep and irregular, with sharp, abrupt, and rather sinuous margins. *Hunterian.*

3493. A larynx, showing the effects of syphilitic ulceration. The whole of the interior of the larynx is defaced by thick edges of swollen mucous membrane and deep barred ulcers, the anatomical arrangement of the parts being entirely destroyed, so that, except on the left side, it is hard to distinguish the vocal cords.

Presented by Dr. Lediard, 1877.

3494. A larynx, with the tongue and other adjacent parts. A deep ragged ulcer extends along nearly the whole length of the right side of the dorsum of the tongue. Ulcers of similar character are seen on the edge and posterior surface of the epiglottis, and have destroyed nearly all the mucous

membrane passing from it to the right arytenoid cartilage. All the remaining mucous membrane is thickened and œdematous. Below the vocal ligaments the larynx is healthy. At its front there is a large aperture, where laryngotomy was performed.

The patient, a man 36 years old, had had syphilis and been salivated two years before; he was admitted into the Edinburgh Royal Infirmary with the ulcers seen in the preparation, and others, which had destroyed the uvula and parts of the inferior surface of the soft palate, and of the back of the pharynx. This disease had existed thirteen months; the patient was very weak and emaciated, and had the usual signs of œdema of the glottis, with occasional paroxysms of intense dyspnœa. In one of these paroxysms laryngotomy was performed, and the respiration after it was easy; but he continued to sink, and died with pneumonia ten days after the operation.

From the Museum of Robert Liston, Esq.

3495. A larynx, with the adjacent parts. The upper half of the epiglottis is destroyed, and the greater part of the mucous membrane on the posterior surface of the remainder is removed by irregular ulceration. The membrane lining the larynx is similarly ulcerated; and that over the arytenoid cartilages has been œdematous.

From a girl 24 years old, who caught cold during profuse salivation for syphilis. From that time she had signs of affection of the throat and chest, and she died six months afterwards with tuberculous disease of the lungs, and pain and swelling of many of the bones, in addition to these changes in the larynx.

From the Museum of Robert Liston, Esq.

3496. A tongue, with the soft palate, pharynx, larynx, and other adjacent parts. There has been a very deep and irregular ulcer at the root of the tongue, which has destroyed the epiglottis, and extended more superficially over the neighbouring parts of the larynx, arches of the palate, pharynx, and velum. The surface of the ulcer, though very uneven, is nearly all cicatrized.

The patient, when 18 years old, had secondary syphilis, and was profusely salivated. Sloughing ulceration in the fauces took place, and for a time his life was in danger, but he recovered with

complete loss of voice and difficulty in swallowing, so that he was afraid of taking any kind of food lest he should be suffocated. Two years after the healing of the ulceration he died with phthisis.

From the Museum of George Langstaff, Esq.

3497. A larynx and tongue, from a negro. The epiglottis is deficient, having probably been destroyed by syphilitic ulceration. The surface of all the membrane between the root of the tongue and the upper part of the larynx is uneven, but polished, and depressed like that of a cicatrix. On the left side, opposite the cornu of the os hyoides, there is a deep oval depression with a smooth base, resembling the cicatrix of an ulcer.

From the Museum of John Taunton, Esq.

3498. A larynx, in which, in consequence of the partial healing of ulceration of the fold of membrane between the epiglottis and the left arytenoid cartilage, the epiglottis is drawn down towards the left side, and the passage into the larynx is reduced to a narrow aperture directed obliquely from above downwards, and from the right to the left side.

From the Museum of Robert Liston, Esq.

3499. A larynx and trachea, from which a great part of the mucous membrane appears to have been removed by superficial ulceration, and subsequently to have been cicatrized. The internal surface of the trachea is irregularly seamed and striated. Above the vocal cords the ulceration has been deeper; bristles are passed beneath two bands of mucous membrane left on the surface of the ulceration.

From the Museum of Sir A. P. Cooper.

3500. A larynx and trachea, the mucous membrane of the latter defaced by numerous scars of circular ulcers.

From a man who had had syphilis.

Presented by Dr. Goodhart.

3501. A trachea of which the mucous membrane along the anterior surface has been destroyed by syphilitic ulceration, and is replaced by interlacing bands of cicatricial tissue.

Presented by Dr. Goodhart, 1880.

Morbid Growths.

3502. A spiculated warty growth, which grew from the free border of the right vocal cord. The pedicle was comparatively small. When the glottis closed, it was compressed between the two vocal cords. It is composed in great part of epithelium.

From a gentleman, aged 42. Nine years before he came under treatment he caught a severe cold; laryngitis supervened, and he had been hoarse ever since, with a constant desire to clear his throat. The growth was removed with the *écraseur*. The voice was completely regained. (Trans. Path. Soc. vol. xix. p. 87.)

Presented by Dr. Duncan Gibb, 1868.

3503. A larynx in which the anterior portion of the glottis is filled-up by papillated and prominently projecting nodules of a new growth, springing from the angle formed by the junction of the two halves of the thyroid cartilage. An opening into the larynx has been made by laryngotomy.

Presented by John Gay, Esq., 1869.

3504. Two deeply lobulated warty tumours, removed from the larynx with an *écraseur*. The lower one has been accidentally stained by iron-rust. They sprang from the anterior part of the larynx, in the sub-epiglottal space, below the origin of the true vocal cords.

From a single lady, aged 38. One growth was removed at the first operation; the second four days later. She recovered her voice immediately. (Trans. Path. Soc. vol. xvii. p. 22.)

Presented by Dr. Duncan Gibb, 1865.

3505. A larynx, with the thyroid body. The glottis and the laryngeal ventricles are occupied by a large warty growth, or "cauliflower-like excrescence." The growth is attached to the whole of the mucous membrane covering the

vocal cords and the ventricles; its surface is fissured and minutely lobulated: it is large enough to have completely covered the aperture of the glottis. *Hunterian.*

- 3506.** A larynx, with the tongue and part of the trachea. Attached to the posterior part of the rima glottidis, between the arytenoid cartilages (which are pressed outwards and forwards), is an elongated somewhat pyriform growth, which extends upwards nearly as high as the upper border of the epiglottis. It is vascular and spongy in texture. Its length is an inch and a half, and its greatest diameter three quarters of an inch. Its neck is narrow; and its anterior surface, projecting suddenly forwards into the space above the glottis, fits closely the concave posterior surface of the epiglottis, but, being only connected with the loose submucous tissue, the whole growth can readily be moved backwards and forwards.

- 3507.** A soft lobulated growth removed from the lingual surface of the epiglottis. Its structure is that of epithelial cancer.

From a lady, aged 60. She had had dysphagia, pain in her throat, and bloody expectoration for two years. She was pale and emaciated, speaking in a thick guttural tone. The growth was removed by the ecraseur, and she remained well for about a year, when a growth of similar nature to the first recurred, and was removed from the same spot. (See *Medico-Chirurg. Trans.* vol. xlviii. p. 1.)

Presented by Dr. Duncan Gibb, 1865.

- 3508.** A larynx affected with epithelial cancer. The left side of the thyroid fossa has upon it a ragged, slightly raised ulcer, and on the right side the ulceration is extensive below the vocal cords, and has led to a partial separation of the thyroid cartilage from the soft parts above it.

From a man, aged 57. He had been suddenly seized with darting pain in the throat, without any warning, some fifteen months before he came for treatment. He had hoarseness, constant cough, pain in the throat, and dysphagia. He was treated with strong solutions of nitrate of silver applied locally, and always with some temporary relief; but he died a month later. (Jacksonian Prize Essay, 1863, MS. Appendix, Case No. 28.)

Presented by Dr. Morell Mackenzie, 1863.

3509. A larynx and adjacent parts, seen from above, with a warty-looking cancerous ulcer in the pharynx behind the arytenoid cartilages. The left aryepiglottidean fold is much thickened and its pharyngeal aspect ulcerated; and a raised crescentic ridge can be seen on the posterior surface of the pharynx on a level with the base of the epiglottis, which involves the posterior surface of the arytenoid and cricoid cartilages. There is a tight stricture of the upper part of the œsophagus.

From a woman, aged 36. She suffered from much dyspnœa and extreme spasm of the glottis, from pressure on the recurrent nerves.

The case is recorded in the Jacksonian Prize Essay, 1863, MS. Appendix of Cases, Case No. 30; also vol. i. p. 73. It is figured Table ii. fig. 13.

Presented by Dr. Morell Mackenzie.

3510. A larynx, with a large lobulated tumour of cancerous matter involving its right side and pressing upon the epiglottis and the rima glottidis.

From a man, aged 30. Twelve months before death he complained of sore throat, for which he underwent much treatment by caustic applications. A part of the right tonsil was excised, with relief; but soon, the part left behind increased in size, the cervical glands became enlarged, and dysphagia supervened. The skin gave way over the glands, and a malignant sore appeared. Dyspnœa came on, and he died on his way to the Nottingham Hospital. (Path. Soc. Trans. vol. xii. p. 56.)

Presented by Dr. Duncan Gibb, 1868.

3511. A larynx and trachea, with a rounded cancerous tumour of a soft and alveolar appearance, which is said to have grown from the posterior wall of the trachea, just below the larynx. It appears to have grown into the trachea from outside, and was in communication with a cancerous stricture of the œsophagus.

From a female, aged 53. She was much emaciated, had severe dyspnœa on swallowing food, and died of inanition. The case is recorded in the 'Transactions of the Pathological Society,' vol. xii. p. 99; also in 'Diseases of the Throat,' by Dr. Gibb, 2nd edit. p. 277.

Presented by Dr. Duncan Gibb, 1868.

Results of Tracheotomy.

3512. A larynx, with parts of the trachea and tongue. The mucous membrane of the larynx above the vocal ligaments is thickened and has an uneven surface, covered with large granulations. The outline of the surface thus diseased is symmetrical. On the right side, near the level of the lower margin of the cricoid cartilage, are the cicatrices of two round superficial ulcers, each nearly half an inch in diameter. Anteriorly, in the middle line, is an aperture where tracheotomy was performed several weeks before death; its margins are smoothly rounded.

The patient, a man 22 years old, had suffered with signs of phthisis laryngea for five months before tracheotomy was performed. The operation afforded great relief, and on the tenth day after it the interior of the larynx was touched with a strong solution of nitrate of silver, passed up on lint through the wound. This was repeated every second or third day, and the patient's condition improved; but several weeks afterwards bronchitis ensued, and speedily proved fatal. The lungs were found in an advanced stage of tuberculous disease.

The case is recorded in Mr. Liston's 'Elements of Surgery,' ed. 1831, part ii. p. 255.

From the Museum of Robert Liston, Esq.

3513. A larynx and trachea, with the adjacent parts. Just below the thyroid cartilage is an aperture, where tracheotomy was performed a long time before death. The aperture is very narrow, the skin adheres firmly to its borders, and it is nearly closed with lymph. For an inch below this aperture the membrane lining the trachea is thickened, indurated, and irregular on its surface, as if cicatrized; and the canal becomes gradually narrower till it is less than a quarter of an inch in diameter. It continues of this size for half an inch, and then becomes much larger; but an inch lower down it is again contracted to even a less size than before. This second stricture, however, is shorter than the first, and almost directly below it the trachea resumes its natural size. The mucous membrane is in all these parts, and especially at the seats of the strictures,

thickened, indurated, and uneven, as if from the formation of cicatrices upon its surface.

The case is thus described by Mr. Liston :—"The poor fellow had worn a small silver tube in an opening in his windpipe for many years. It was originally introduced on account of long-continued disease of the larynx, with dreadful suffering and constant sense of impending suffocation. He could not be made to dispense with the tube entirely, as he felt, immediately on the wound closing, a threatening of return of his painful and dangerous symptoms. A small one was substituted for that at first used. He led a very irregular life, used a vast quantity of opium, and no small amount of spirituous liquors. He used to be out in the open air occasionally all night, and suffered repeatedly under attacks of bronchitis and rheumatism. . . . He could articulate tolerably well when he stopped with his finger the orifice of the silver tube ; at all times a part of the respired air passed through the natural channel. Latterly, he used to suffer from threatening of suffocation, and he used to relieve himself of the cause of this—namely, the inspissated and ropy mucus which got entangled in the trachea, then not suspected to be in a diseased state—by pushing through the opening in the neck and into the bronchi long turkey's feathers. This feat he performed without causing the slightest excitement or coughing. Ultimately, and about twelve years after the operation had been performed, he died, principally from diseased viscera."—*Elements of Surgery*, ed. 1840, p. 454.

From the Museum of Robert Liston, Esq.

Specimens of Diseases of, or involving, the Larynx, Trachea, and Bronchi, in other parts of the Museum, are :—Nos. 143, 632, 633, 646, 2237, 2269, 2280, 2296, 2300, 2302, 2307, 2310, 2312, 2313, 2314, 2316, 2317, 2320, 2900, 2901, 2907, 2908, 3170, 3174, 3183, 3185, 3186, 3188, 3190, 3337, and 3338.

